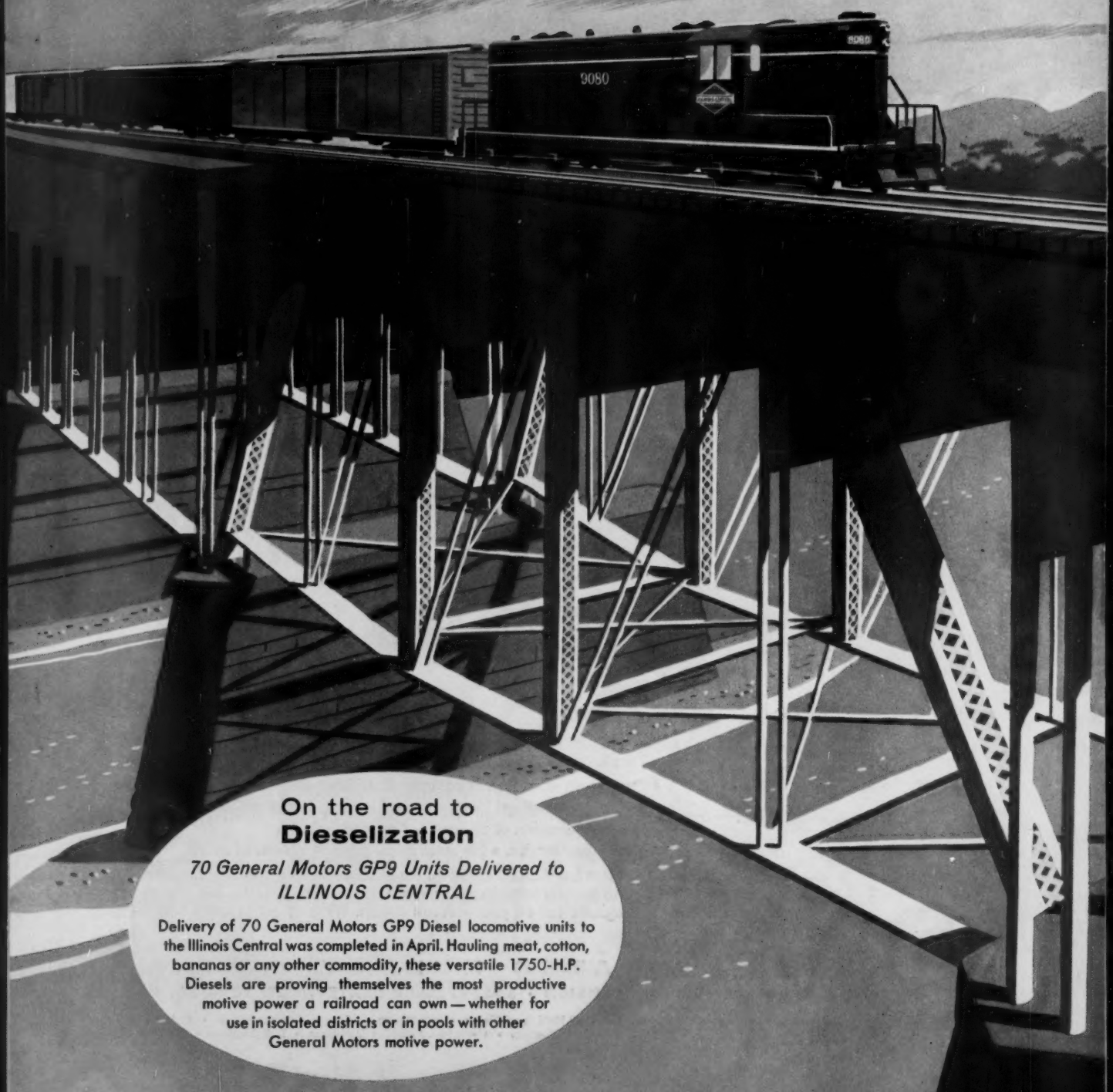
JUNE 6, 1955

Great Things Coming from RPI . . . p. 25

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications



On the road to
Dieselization

70 General Motors GP9 Units Delivered to ILLINOIS CENTRAL

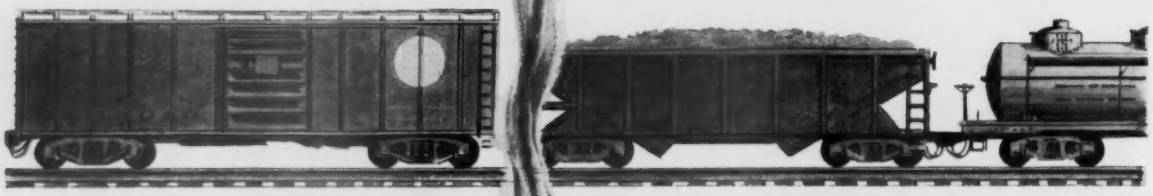
Delivery of 70 General Motors GP9 Diesel locomotive units to the Illinois Central was completed in April. Hauling meat, cotton, bananas or any other commodity, these versatile 1750-H.P. Diesels are proving themselves the most productive motive power a railroad can own — whether for use in isolated districts or in pools with other General Motors motive power.

ELECTRO-MOTIVE DIVISION · GENERAL MOTORS
La Grange, Illinois • Home of the Diesel Locomotive • In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

GENERAL MOTORS LOCOMOTIVES

No capital investment required to

ELIMINATE THE MAJOR



CAUSE OF HOT BOXES

with U.S. EVER-PAC

Ever-Pac now puts in management's hands the remedy for what has always plagued them and shippers—expensive hot boxes. Over 71% of all hot boxes are directly attributable to "waste-grabs." *Ever-Pac makes "waste-grabs" impossible.* Shippers get faster, more reliable service. Costly breakdowns are virtually eliminated.

More impressive still is the fact that U. S. Ever-Pac costs 3 to 14 times LESS than other devices. And because Ever-Pac is a superior replacement for waste packing—it can be classified as an *expense* item—and NOT capital investment.

A product of United States Rubber Company, U. S. Ever-Pac requires no costly special oil seals.

- Interchanges with present equipment, without shop modifications, machining or additional labor costs. • Low-cost initial installation.
- Easy determination of oil level. • Low-cost upkeep.
- Trouble-free service. • No mechanical parts to get out of order.

U. S. Ever-Pac has A.A.R. approval for application to a specified number of cars which move in general interchange service (Docket No. L-129). We will be happy to have an engineer call on you with full details. Write or get in touch with address below.

"U.S." Research perfects it.

"U.S." Production builds it.

U.S. Industry depends on it.

US RUBBER

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

After 27 Years Under High Fill

...THIS CULVERT ALIGNMENT LIKE NEW

This 60-inch Armco Corrugated Metal Pipe safely withstands the tremendous dead load of 77 feet of fill. The 8-gage structure was installed by the Union Pacific Railroad in Wyoming during 1928.

Picture above taken shortly after installation, shows the Armco Pipe (arrow) dwarfed by the fill. The interior view, taken during a 1953 inspection, reveals the continuing good alignment and material condition.

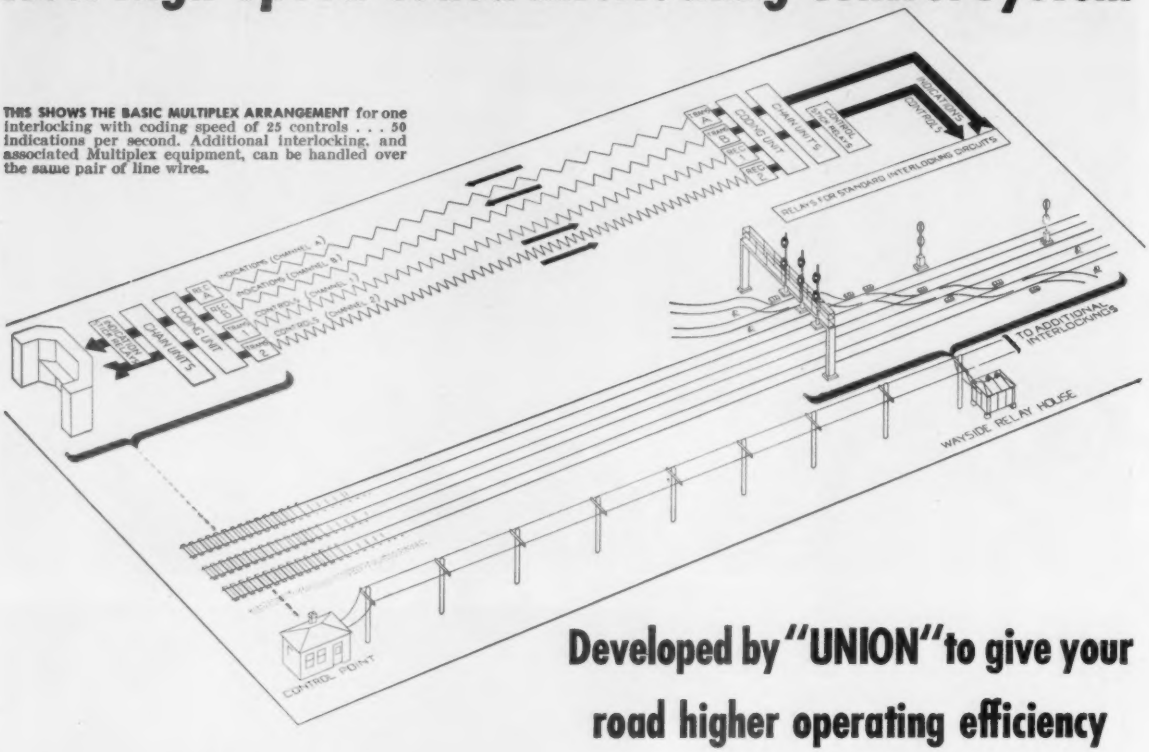
With Armco Structures, soil movement and frost action are no threat to alignment. Simple, bolted coupling bands between long, 20-foot sections of Armco Pipe assure strong, tight joints. In addition, Armco Drainage Structures have the flexible strength of corrugated metal design—your assurance against cracking and breaking under loads.

Write us for details. There's a size and type of Armco Structure for almost every drainage need. Armco Drainage & Metal Products, Inc., 4695 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO CORRUGATED METAL DRAINAGE STRUCTURES

ARMCO®

New High-Speed Coded Interlocking Control System



THIS SHOWS THE BASIC MULTIPLEX ARRANGEMENT for one interlocking with coding speed of 25 controls . . . 50 indications per second. Additional interlocking, and associated Multiplex equipment, can be handled over the same pair of line wires.

Developed by "UNION" to give your road higher operating efficiency

"UNION" Multiplex Code Control System

THE MULTIPLEX CODE CONTROL SYSTEM uses standard Style C or UR control machines.

ARE you planning to build a new remotely-controlled interlocking . . . modernize an older one . . . or consolidate present interlockings for greater economies? If you are, consider these features of the new "Union" Multiplex Code Control System:

- It's the fastest all-relay coded interlocking control system yet developed.
- Basic system transmits 25 controls and 50 indications per second. Can be expanded in multiples of 25 controls and 50 indications per second, such as 50 and 100 per second . . . 75 and 150 per second . . . *simultaneously* over one pair of line wires.
- Each code can contain complete control and indication information for all functions at the interlocking . . . therefore a complete route can be set up with one code.

The "Union" Multiplex Code Control System is designed especially for large and busy interlockings. May we tell you the rest of the story?

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

RAILWAY AGE

EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 79 WEST MONROE STREET, CHICAGO 3, ILL.

EDITOR ..... James G. Lyne
EDITORIAL CONSULTANT ..... Samuel O. Dunn
EXECUTIVE EDITOR ..... William H. Schmidt, Jr.
MANAGING EDITOR ..... C. B. Tavenner
CONSULTING EDITOR ..... C. B. Peck
NEWS & FINANCIAL ..... Gardner C. Hudson
WASHINGTON OFFICE
Walter J. Taft Robert B. Keane
WESTERN EDITOR ..... M. H. Dick
TRAFFIC & TRANSPORTATION
John W. Milliken Joe W. Kizzia
MECHANICAL ..... H. C. Wilcox
E. L. Woodward, G. J. Weihofen, F. N. Houser, Jr.
ELECTRICAL ..... Alfred G. Oehler
ENGINEERING ..... M. H. Dick
R. E. Dove H. H. Hall R. F. Lindsay
PURCHASES & EQUIPMENT ..... Fred C. Miles
SIGNALING & COMMUNICATIONS
John H. Dunn Robert W. McKnight
WESTERN NEWS ..... A. M. Cox, Jr.
PRESENTATION ..... Ralph M. Schmidt
ASSOCIATE EDITOR ..... Charles Layng
LIBRARIAN ..... Edith C. Stone
EDITORIAL ASSISTANTS ..... Ann Ortlinghaus
June Meyer Shirley Smith Wanda Brown

BRANCH OFFICES
WASHINGTON 4, D. C., 1081 National Press building
CLEVELAND 13, OHIO, Terminal Tower
PORTLAND 5, ORE., Terminal Sales bldg.
LOS ANGELES 17, CAL., 1127 Wilshire blvd.
SAN FRANCISCO 4, CAL., 244 California st.
DALLAS 19, TEX., 3908 Lemmon avenue
CORAL GABLES, FLA., 1810 Ponce de Leon blvd.

FOREIGN REPRESENTATIVES
LONDON E.C. 2, England—Sibley-Field Publishing Company, Ltd., 48 London Wall
FRANKFURT AM MAIN (16), West Germany—Linder Presse Union GMBH, International Advertising Agency, Wittelsbacher Allee 60

DIRECTOR ADVERTISING SALES
J. S. Crane, *New York*
SALES MANAGER
J. R. Thompson, *Chicago*
DISTRICT SALES MANAGERS
H. H. Melville, *Cleveland*
C. W. Merriken, *New York*
DIRECTOR OF PRODUCTION
M. J. Figa, Jr., *New York*

Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., under the Act of March 3, 1879. James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. Samuel O. Dunn, chairman emeritus. J. S. Crane, vice-president and secretary.

SUBSCRIPTION TO RAILROAD EMPLOYEES ONLY IN U. S., U. S. POSSESSIONS, CANADA AND MEXICO, $4 ONE YEAR, $6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE FREE. TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, $10 A YEAR; IN OTHER COUNTRIES, $15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE ONE-YEAR RATE, SINGLE COPIES 50c, EXCEPT SPECIAL ISSUES $1. CONCERNING SUBSCRIPTIONS ADDRESS ROBERT G. LEWIS, VICE-PRESIDENT, 30 CHURCH ST., NEW YORK 7.

June 6, 1955 **Vol. 138, No. 23**

Week at a Glance

With freight-cars in a virtual "no surplus" situation, the AAR has called a meeting in Chicago June 24 to consider "plans for increasing the car fleet and improving its utilization." 7

The N&W's first diesels — eight of them — were ordered last week. The order, the road emphasizes, was placed to meet a special situation; reflects no diminution of confidence or interest in coal-burning power. 7

Budd RDC's with dining sections and observation domes may be a definite near-future possibility for "middle-distance" service, following a successful high-speed Washington-Chicago test on the B&O. 8

FORUM: The reorganized RBA — now the Railway Progress Institute—holds promise of doing great good for the railroads, for their suppliers, and for the national welfare. 25

Long rails by the flash process of butt-welding are now being produced for the Santa Fe by an adaptation of a technique developed in Europe. 26

A new way to ship steel coils has been developed by the Nickel Plate. 30

The Reading uses Fairbanks-Morse "Train Masters" —2,400-hp single units—to replace two 1,600-hp diesels in passenger and heavy yard service. 32

N. R. Crump, new president of the CPR, believes railroads are more needed today than ever before; their main job is to obtain freedom to exploit their natural advantages. 36

Personnel has become a new frontier, as railroad officers show increased interest in getting maximum returns from today's high-wage dollars. 39

Engineer's "guide to better handling"

The Westinghouse Type "B" Brake Pipe Flow Indicator is just a small instrument but it gives the engineer a great deal of information as to what is happening in the brake pipe of his train. Our representatives will be glad to tell you all about it.

Westinghouse Air Brake
COMPANY

AIR BRAKE DIVISION WILMERDING, PA.

Current Statistics

Operating revenues, three months	
1955	$2,298,884,456
1954	2,265,312,671
Operating expenses, three months	
1955	$1,763,808,781
1954	1,836,579,222
Taxes, three months	
1955	$ 241,932,325
1954	222,990,391
Net railway operating income, three months	
1955	$ 232,177,806
1954	145,201,184
Net income, estimated, three months	
1955	$ 175,000,000
1954	92,000,000
Average price railroad stocks	
May 31, 1955	96.58
June 1, 1954	66.45
Carloadings, revenue freight	
Twenty weeks, 1955	13,426,526
Twenty weeks, 1954	12,463,681
Average daily freight car surplus	
Wk. ended May 21, 1955	14,131
Wk. ended May 22, 1954	121,545
Average daily freight car shortage	
Wk. ended May 21, 1955	6,552
Wk. ended May 22, 1954	307
Freight cars on order	
May 1, 1955	17,930
May 1, 1954	17,817
Freight cars delivered	
Four months, 1955	10,013
Four months, 1954	17,779
Average number railroad employees	
Mid-April 1955	1,009,159
Mid-April 1954	1,052,350

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATIONS (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

Departments

Competitive Transport	10
Current Publications	22
Equipment & Supplies	7
Figures of the Week	11
Financial	12
Forum	25
Labor & Wages	9
Law & Regulation	10
New Facilities	11
Operations	8
Organizations	11
People in the News	9
Questions and Answers	16
Railway Officers	46
Rates & Fares	9
Securities	14
Traffic	7

Week at a Glance CONTINUED

BRIEFS

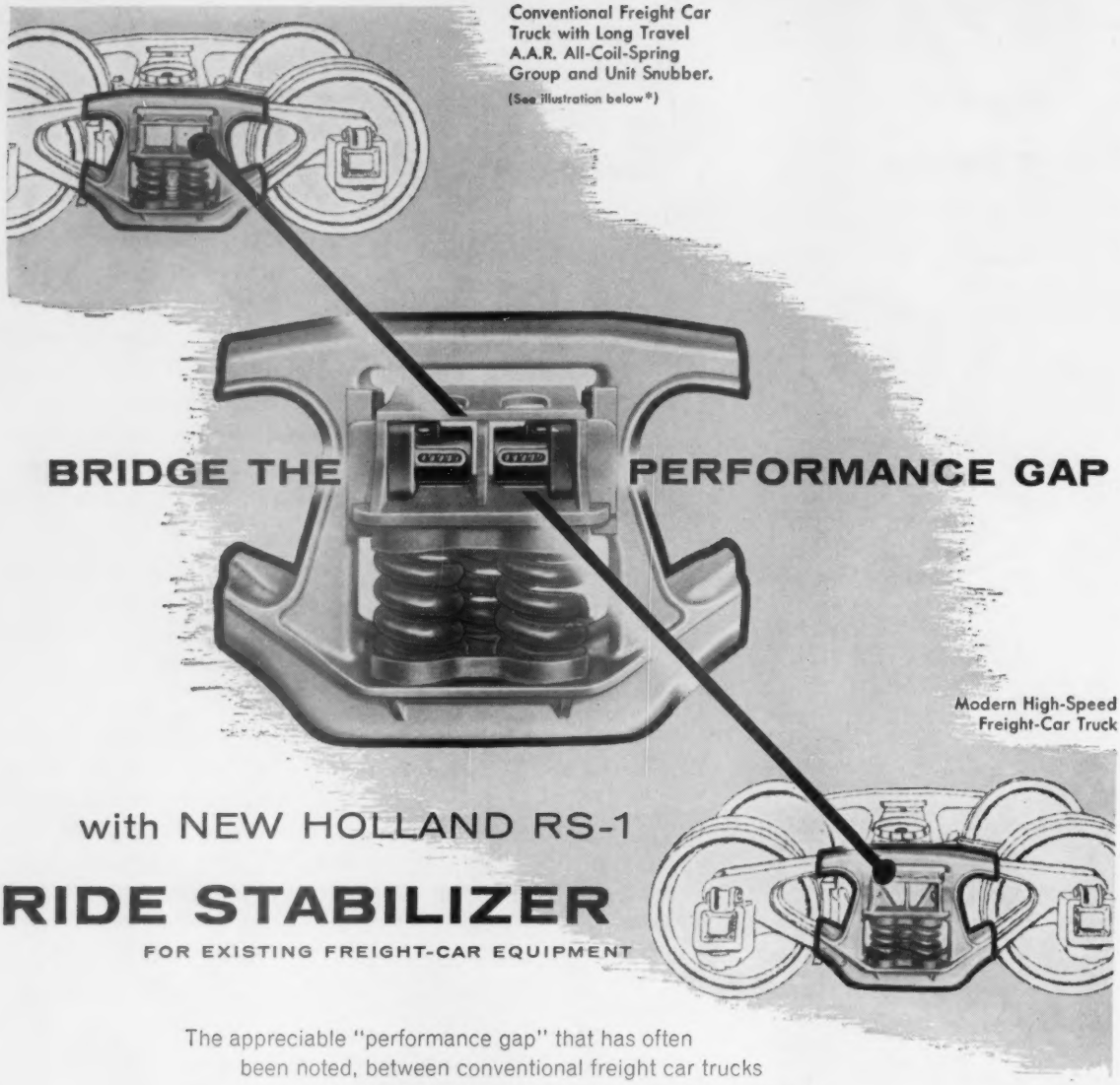
State of emergency in Great Britain was proclaimed last week by Queen Elizabeth as a result of the crisis caused by a nationwide railroad strike. As this issue went to press, about 67,000 enginemen and firemen were on strike for higher wage differentials. Nevertheless, some 17,000 members of a non-striking union managed to maintain service at around 20% of normal.

Three major railroads are reportedly ready to cooperate in Pittsburgh Consolidation Coal Company's project, announced last week, of building a 108-mile coal pipe line to serve a Cleveland utility.

Because its "job is finished," the Long Island Transit Authority, in a formal report to New York Governor Harriman, has recommended that its own existence be terminated. And, as if that weren't a sufficiently unusual step for a governmental agency, it expects to return to the state treasury "a substantial portion of the funds appropriated to the authority this year." Both actions are predicated on the authority's statement that "rehabilitation of the railroad is well under way."

Railroads got only $186.7 million, or 68.3%, of the $273.4 million which the 60 large freight forwarders spent for transportation service in 1954. Their 1953 "share" was 69.7%. Meanwhile, the "share" of line-haul truckers rose from 15.4% to 16%.

Heavy airliner traffic—close to 1,000 movements a day—has forced the issue of transferring some Chicago airline operations from Midway airport to O'Hare field. About September 1 some 30% of Midway traffic will move to O'Hare—if the city can complete installation of navigational control equipment, ticket office facilities, etc. Landing fees at O'Hare are supposed to make the field "self-sustaining" and to amortize city, state and federal investment of some $23 million. Charges at Midway are much lower—hence the airlines' reluctance to move despite peak traffic of a landing or take-off every 20 seconds.



Conventional Freight Car Truck with Long Travel A.A.R. All-Coil-Spring Group and Unit Snubber.
(See illustration below*)

BRIDGE THE PERFORMANCE GAP

Modern High-Speed Freight-Car Truck

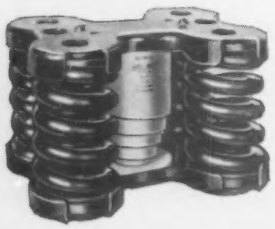
with NEW HOLLAND RS-1

RIDE STABILIZER

FOR EXISTING FREIGHT-CAR EQUIPMENT

The appreciable "performance gap" that has often been noted, between conventional freight car trucks with A.A.R. long travel all-coil-spring group with unit snubber, and freight car trucks with built-in bolster control, is now successfully bridged.

The new Holland RS-1 Ride Stabilizer, a simple unit of radical but proven design, is easily applied to conventional type trucks and gives them riding qualities comparable to the modern high-speed trucks recently tested by the A.A.R. Write for Bulletin No. 16A for complete technical details.



2½ Travel Spring Group with Unit Snubber

HOLLAND COMPANY

332 South Michigan Avenue • Chicago 4, Illinois

777

AAR Moves to Increase Car Fleet

Board of directors calls special meeting of member roads for Chicago June 24

"Plans for increasing the railroad freight-car fleet and improving its utilization" will be considered by member roads of the Association of American Railroads at a special meeting in Chicago June 24.

This was announced by AAR President William T. Faricy following the May 27 meeting of the association's board of directors in Washington.

Tight Situation—The freight-car situation has been tight in recent weeks, as was pointed up by the latest surplus and shortage figures. For the week ended May 21, the average daily shortage was 6,552 cars while the average daily surplus was only 14,131 cars, Car supply experts consider this a "no surplus" situation.

The latest offical survey of supply conditions came in the May 20 report on the "National Transportation Situation," issued by Chairman Arthur H. Gass of the AAR's Car Service Division. It noted that box cars remain "the number one car supply problem."

The present demand for box cars, Mr. Gass said, "is the greatest for this season of the year since 1951." He added this heavy demand has resulted in some shortages, especially for the better-grade cars and all classes of 50-ft and wide-door, 40-ft equipment.

Net Increase—Meanwhile, the CSD chairman noted that there was a net increase of 3,536 cars in the serviceable box-car fleet during the past two months. This was brought about by the restoration of 4,206 bad-order cars to serviceable condition while total ownership decreased by 670 cars.

As to other types of cars, Mr. Gass reported that supply conditions have been generally "tight," although the situation has recently eased here and there. As to freight-car performance, he said that each serviceable car turned out 933 net ton-miles of service per day in March. This was 14.3% better than the March 1954 performance and better than any 1954 month except October (954 net ton-miles), when that year's loadings were at their peak.

Equipment & Supplies

N&W Orders 8 Diesels And 500 Box Cars

The Norfolk & Western has ordered eight general-purpose diesel locomotive units costing about $1,400,000. The road also has ordered 500 steel box cars at a cost of $3,600,000. Four of the diesel units will be built by the Electro-Motive Division of General Motors Corporation, and four by Alco Products, Inc. The box cars will be constructed by the Pullman-Standard Car Manufacturing Company.

R. H. Smith, N&W president, said the diesel units will be operated on the light-traffic branch line between Lynchburg, Va., and Durham, N.C., permitting the road to transfer heavy steam locomotives now used on that branch to main-line operations, where they are needed for heavy-duty service. Single diesel units will be used in yard-switching operations, and in multiples of three or four for straight road service. Delivery of the diesels is expected in September.

"This does not mean that we have changed our view that our modern roller-bearing coal-burning steam locomotives can handle the major part of our traffic economically," Mr. Smith said. "Nor does it mean that our interest in new and better types of coal burning locomotives has diminished in any way."

Major reason for switching to diesels on the Durham line, Mr. Smith added, is "based on our need at the present time for additional motive power elsewhere, and particularly for the large type power we are at present using on the Durham line, where, because of comparatively thin traffic, we are not able to get out of this large power the full service of which it is capable. We have therefore concluded that the smaller diesel units will be sufficient for that territory."

DEVELOPMENT OF AIR RIGHTS to create a commercial, shopping and transportation center over yards used by the New York Central and the New Haven in New York City's Bronx borough has been proposed by Powers & Kessler, New York architects. The suggested development, accessible both by rail and highway, would include an office building, stores and parking space for several thousand automobiles.

FREIGHT CARS

The **Gulf, Mobile & Ohio** is inquiring for 200 50½-ft 50-ton box cars.

The **Northern Pacific** has ordered 20 "Airslide" covered hopper cars from the General American Transportation Corporation at an estimated unit cost of $11,790. Delivery is scheduled for not later than the third quarter of this year. The NP's Brainerd, Minn., shops have just finished converting 50 steel-sheathed box cars to damage-free cars at an estimated cost of $2,166 for each car.

The **Virginian** has ordered 300 70-ton covered hopper cars from its own shops at an estimated cost of $2,000,000. Delivery is expected next November and December.

LOCOMOTIVES

The **Chicago & North Western** has ordered 22 diesel units at an approximate cost of $4,250,000. The Electro-Motive Division of General Motors Corporation will build nine 1,750-hp road-switchers, of which four will have 6-wheel trucks; Fairbanks, Morse & Co., 10 1,600-hp road-switchers, all with 6-wheel trucks; and Alco Products, Inc., three 1,000-hp switchers. Deliveries are scheduled for the third

quarter of 1955. Three of the 22 units will be equipped for full-time suburban service.

SIGNALING

The **New York Central** has ordered from the General Railway Signal Company equipment for installation of "Syncroscan" electronic traffic control on 164 miles of its Erie division, between Buffalo and Cleveland. Installed on two tracks of the present four-track main line, Syncroscan will enable the Central to convert to two-track operation with either direction running on both tracks. The entire territory, including eight interlockings, will be controlled from Erie, Pa. Use of an electronic signal control system will make possible a simplified track arrangement, improved train operation, and reduced annual operating expenses (*Railway Age*, May 23, page 8).

SPECIAL

The **Southern Pacific** has ordered 100 Western automatic air dump cars, each with a capacity of 30 cu yd or 50 tons, from the Baldwin-Lima-Hamilton Corporation.

Operations

Taylor's Rerouting Authority Continued

ICC Service Order No. 562 has been modified by Amendment No. 7 which set back the expiration date for another year—until May 25, 1956. Under the order, Director Charles W. Taylor of the commission's Bureau of Safety and Service is the commission agent with power to authorize diversion and rerouting of freight cars to meet emergency conditions.

C&NW Adds to Its Piggyback

Three more piggyback services—all of them interline—have been announced by the Chicago & North Western.

On May 31, overnight service for less-carload shipments was inaugurated between Chicago and St. Louis in cooperation with the Litchfield & Madison. The new service is planned to permit its use from such C&NW points as Milwaukee, the Twin Cities, Green Bay, Duluth and Superior, as well as from Chicago. (Preparation for this service by the L&M, which connects with the C&NW at Benld, Ill., was announced in the April 25 *Railway Age*, page 4).

Second-morning delivery of lcl piggyback shipments between Louisville and the Twin Cities has been placed in effect in cooperation with the Chicago, Indianapolis & Louisville. Another newly established service provides second-morning delivery of lcl from Cincinnati to such points on the C&NW as Milwaukee and the Twin Cities by connection with the Pennsylvania.

More Time to Consider Loco-Inspection Rules

Interested parties now have until November 1 to submit to the Interstate Commerce Commission their "evidence-in-chief" with respect to the commission proposal to amend its rules and instructions for inspection and testing of locomotives other than steam.

The proposal is the subject matter of the Ex Parte 174 case, and the previous deadline for the initial filings was June 1 (*Railway Age*, May 9, page 8). Under the new schedule, notices of objections to receipt of any of the evidence-in-chief will be due December 1, and rebuttal evidence will be due January 3, 1956. Requests for opportunity to cross-examine must be made (with notice to the witness involved) on or before February 18, 1956.

B&O RDC's Make Long High-Speed Test Run

A train of three Budd rail-diesel cars—two of the RDC-1 full-coach type and one combine car of the RDC-2 type—successfully completed a high-speed test trip on the Baltimore & Ohio from Washington to Chicago May 28.

At an average overall speed of 61.4 mph, the special train made the 768-mile run in 12 hr 29 min—three hours faster than the 15½-hr schedule of the "Capitol Limited," the B&O's fastest regular train between the two cities.

The return trip was made May 30; because of a different routing through Pittsburgh and a dinner stop at Cumberland, Md., the elapsed running time was lengthened to 12 hr 40 min.

No special preparation of equipment was made for the run; the cars had been in regular commuting service until the day previous, when they were withdrawn and assigned to the special schedule, which had been tentatively set at 13 hr from Washington to Chicago. They were returned to regular service May 31.

The trip was sponsored by the railroad to provide information on the practicability of using RDC's for fast daylight runs between Washington and Chicago, Philadelphia and Pittsburgh, and possibly other cities served by the B&O—which has under way tentative plans for RDC cars with observation dome and dining facilities for such "middle-distance" services.

The special train carried 214 passengers, most of whom were members of the Washington chapter of the National Railway Historical Society.

Westbound crews were changed at Cumberland, Pittsburgh and Willard, Ohio, while the cars were fueled and watered at the same short stops. Supervisory enginemen ran the train most of the way.

REA Inaugurates "SPED" Service, NY-Washington

A new expedited depot-to-depot rail express service between New York, Philadelphia, Baltimore and Washington, D.C., was inaugurated June 1 by the Railway Express Agency (*Railway Age*, May 30, page 5).

Under the new plan, identified as "SPED" ("SPecial Expedited Depot service") commercial shippers and receivers, as well as the general public, will, for the first time, be able to forward and receive urgent shipments of merchandise and other rush matter at railroad stations on a regular basis.

Carried at regular express rates—$1.80 for up to 9 lb between New York and Washington, for example—"SPED" shipments will be available for pickup at destination station with-

"SPED" SHIPMENTS will carry this special label, 3 in. by 3¾ in. in size, and printed in bright red.

RAILWAY AGE *EDITOR WINS ABP AWARD*

James G. Lyne, editor of *Railway Age*, was one of 15 business paper editors honored recently as winners of the first Jesse H. Neal Editorial Achievement Awards. The awards, established last year by Associated Business Publications to recognize and promote outstanding editorial accomplishment by members of ABP, are presented in two categories.

Mr. Lyne's award was for a series of three or more editorials which have contributed significantly to the field or industry served. Presentations were made at the concluding session of ABP's recent annual three-day spring conference in Hot Springs, Va.

in a matter of hours after dispatch.

"SPED" is being introduced between the four cities, according to K. N. Merritt, REA traffic vice-president, in response to shipper interest in such a courier-type service, and to determine the advisability of establishing similar expedited transportation connecting other major cities across the nation.

Under the new plan, station-to-station shipments, marked with a bright red label, will be carried frequently throughout the day in express cars on 14 southbound and 10 northbound Pennsylvania trains. Shipments for specific trains will be received up to 30 minutes before train departure and will be available at destination immediately after arrival. The new service is expected to meet rush shipment needs of manufacturers, retailers, printers and publishers, advertisers, and businessmen, as well as the general public.

Through the new plan, Mr. Merritt said, it will now be possible for a Washington retailer, for example, to make same-day delivery to customers of special or out-of-stock apparel or other merchandise. In response to a morning telephone call, New York manufacturers can bring the rush merchandise shipment to Pennsylvania Station and 4½ hours later the retailer can pick up the shipment at Union Station in Washington. Regular rail express service involving vehicle pick-up from shipper and vehicle delivery to consignee at destination is not otherwise possible between those two points on a same-day basis.

Reading Expands its Piggyback Service

The Reading on June 1 expanded its trailer-on-flat-car operations to include a new service between Philadelphia-Camden and points in Minnesota and Wisconsin. Western points served by the new service include Duluth, Minneapolis, St. Paul, Manitowoc, Oshkosh, Sheboygan, Green Bay and Fond du Lac. The service provides third-day delivery in both directions and is operated in cooperation with the Western Maryland, the Pittsburgh & West Virginia, the Nickel Plate and the Chicago & North Western.

Rates & Fares

ICC Asked to Review War Claims Decision

The Department of Justice has filed a 267-page petition with the Interstate Commerce Commission asking reconsideration of the commission's dismissal of the World War II reparations cases.

The petition, signed by Assistant Attorney General Stanley N. Barnes, charges the commission with committing error on 24 general points and with numerous errors in the particular cases. The proceeding involved 17 separate complaints alleging overcharges by the railroads on transportation of war materials.

As reported in *Railway Age*, April 11, page 7, the ICC dismissed each of these complaints stating that, if anything, the rates paid by the government were "considerably lower" than commercial shippers would have paid.

The Justice Department petition includes 64 pages attacking the commission's general findings and devotes 153 pages to a case dealing with export rates. The petition restates the government's position as set forth in earlier proceedings on such issues as section 22 rates, land grant mileage and equalization agreements. There was no indication in the document as to whether it is a precursor of a court appeal from the commission's ruling.

Labor & Wages

"Weight-On-Drivers" Pay Case Settled

Agreement was reached in Chicago May 26 on demands of the Order of Railway Conductors & Brakemen for a graduated rate of pay.

The case had its inception in demands by the brotherhood for pay based on weight on driving wheels of the locomotive handling a train. This basis was subsequently rejected by a Presidential emergency board, which left it to negotiators to figure some other means of providing an increase for through freight conductors (*Railway Age*, April 4, page 7).

The new agreement calls for present rates of pay for freight conductors and brakemen on road freight trains to be scaled upward according to the number of cars in a train. The increases as agreed upon—and to be effective June 16—are as follows:

One to 80 cars—20 cents a day.
81 to 105 cars—55 cents a day.
106 to 125 cars—95 cents a day.
126 to 145 cars—$1.20 a day.
146 to 165 cars—$1.30 a day.
For each additional block of 20 cars or less above 165—An additional 20 cents a day.

The agreement is similar to that reached May 11 with the Brotherhood of Railroad Trainmen (*Railway Age*, May 16 page 166) except for some revisions agreed upon in concurrent negotiations with the trainmen's and conductors' unions.

Dining car stewards represented by the BRT received a $5 monthly increase in connection with the May 26 agreement.

People in the News

T. B. Wilson Takes Commerce Post

T. B. Wilson is the new deputy under secretary of commerce for transportation. He is deputy to Louis S. Rothschild, under secretary of commerce for transportation.

Mr. Wilson's transportation experience has included executive positions in all branches of the industry—rail, air, highway and water. He was with the Southern Pacific from 1911 until 1927, when he became vice-president and general manager of that road's highway subsidiary, Southern Pacific Motor Transport Company.

He has also been president of Pacific Greyhound Corporation, vice-president and general manager of the Alaska Steamship Company, and chairman of the board of Transcontinental & Western Air, Inc. During World War II, he was in service in the Pacific theater, rising to the rank of brigadier general.

Mr. Wilson returned to the TWA chairmanship in 1944, resigning in 1947. He has been in federal-government positions since 1950. He came to Commerce from the General Services Administration where he was serving as deputy commissioner for emergency procurement service.

Civil Service to Fill Transport Specialist Jobs

The U.S. Civil Service Commission expects to announce an examination about the middle of June for transportation specialist (freight and passenger) positions. Most of the positions to be filled are in the Departments of the Army, Navy, and Air Force, and the Marine Corps headquarters, in Washington, D.C., and vicinity; salaries range from $3,410 to $10,800 a year.

Applicants must have had from

three to six years of appropriate experience. Appropriate college study may be substituted for part of the experience. A written test will be given.

Interested persons may secure further information and application forms from the U.S. Civil Service Commission, Washington 25, D.C.

Taylor Now Director of ICC Service-Safety Unit

Charles W. Taylor is now director of the Interstate Commerce Commission's Bureau of Safety and Service. He had been serving as acting director since formation of the bureau about a year ago (*Railway Age*, June 10, 1954, page 15).

Competitive Transport

ICC Sets Investigation of McLean Truck, Ship Deal

The Interstate Commerce Commission has instituted an investigation into the attempt by trucker Malcom P. McLean to take over the Waterman Steamship Company.

Although the investigation was instituted on the commission's own motion, its announcement followed closely a petition by seven railroads asking for just such a probe.

The main issue raised in the commission's investigation revolves about whether Mr. McLean has effectuated "control or management in a common interest of Pan-Atlantic Steamship Corporation (formerly a Waterman lines subsidiary) and McLean Trucking Company." Such control could be a violation of Section 5(4) of the Interstate Commerce Act, the commission stated.

The railroads that asked for commission action are the Atlantic Coast Line, Baltimore & Ohio, Louisville & Nashville, New Haven, Pennsylvania, Seaboard and Southern. The commission ordered that their complaint be consolidated with the investigation case and the application by McLean for the control now challenged.

Law & Regulation

Plant Switching Orders Liberalized by the ICC

Interstate Commerce Commission orders restricting car-spotting operations performed by railroads in Official territory have been liberalized by the commission.

The liberalization came in a supplemental report in the Ex Parte 104 case, and it was a logical result of the commission's decision of last January which approved car-spotting rules agreed upon by a committee representing Official-territory railroads and the National Industrial Traffic League. The rules have become part of the joint agency tariff covering spotting services in Official territory. (*Railway Age*, January 17, page 6.)

The commission modified outstanding orders relating to switching performed at plants in Official territory to the extent necessary to permit railroads to furnish spotting services like those permitted by the tariff.

Railroads in other territories were advised that they may petition for like modification of orders relating to spotting services which they perform. And railroads in all territories may petition for modification of orders which prohibit the payment of allowances to industries which perform their own spotting operations.

. . . To expedite loading of box cars, the Union Pacific has come up with a device called "Case Load-O-Meter," which shows the best loading pattern for commodities of specific sizes. When the package size is indicated on a dial, the small circular device shows the proper pattern for successive layers of lading, and how to tie in the load. One side is for box cars, the other for refrigerator cars. The UP is distributing the meters to canning associations, railroads and shippers of case goods. Meters are obtainable from O. J. Wullstein, UP general claims agent, 1416 Dodge street, Omaha 2, Neb.

ICC Commemorates Steam Locomotive Era

The Interstate Commerce Commission has installed in the main lobby of its Washington headquarters building a locomotive bell "in memory of the steam locomotive that served so long and so well."

That's the inscription on the pedestal on which the bell is mounted. The bell was presented by Frisco President Clark Hungerford and accepted by ICC Chairman Richard F. Mitchell at ceremonies held on the afternoon of May 26.

The ceremonies went on despite protests of coal interests, including the National Coal Association, which sent a complaining telegram to President Eisenhower. Other protestants included members of Congress representing coal-producing areas.

IT CAME from a retired "oil burning" locomotive, ICC Chairman Mitchell (left) said in accepting the bell from Frisco President Hungerford.

Wide World Photos, Inc.

N.Y. RR CLUB ANNOUNCES SEVENTH ESSAY CONTEST

The New York Railroad club has announced its seventh consecutive yearly essay contest. First prize will be $750; second prize, $500; and third prize, $250. All essays should be in the hands of John Burry, executive secretary of the club, 30 Church street, New York 7, N.Y., on or before next October 1.

Suggested subjects are: Argue for or against any or all recommendations made by President Eisenhower's Advisory Committee on Transport Policy and Organization (*Railway Age*, April 25, page 49); changes in rates and service to improve railroad traffic volume and net earnings, including essayist's views on improving the competitive position of railroads; what railroads can do to improve their system of recruiting, selecting and training personnel, including management personnel; what can be done to improve the quality of the railroads' freight-car fleet, including discussion of improved methods of acquisition and financing and the assurance of an adequate supply of high-grade equipment at all times.

Contestants are not limited to suggested topics; but if they wish to submit an essay on another topic, written approval should first be obtained from the club's contest committee.

More than 200 persons, including several railroad officers, attended the ceremonies at which Mr. Hungerford presided and made the presentation speech. Then came Chairman Mitchell's acceptance speech, followed by brief talks by Presidents William T. Faricy of the Association of American Railroads and J. M. Hood of the American Short Line Railroad Association.

ICC Will Consider New Rules of Practice

The Interstate Commerce Commission has instituted a proceeding for the purpose of considering a proposed revision of its rules of practice and proposed changes in its organization and assignment of work.

The proceeding is docketed as Ex Parte No. 195. The proposals to be considered were submitted by the chairman of the committee on rules of practice of the Association of Interstate Commerce Commission Practitioners.

They were published in the May 14 Federal Register, being that issue's 71-page Part II.

Figures of the Week

Freight Car Loadings

Because of the May 30 Memorial Day Holiday, neither car loadings of revenue freight for the week ended May 28, nor the detailed breakdown by districts and commodity classifications for the week ended May 21, were available when this issue of *Railway Age* went to press.

In Canada.—Carloadings for the seven-day period ended May 14 totaled 81,495 cars, compared with 78,932 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
May 14, 1955	81,495	31,481
May 14, 1954	69,748	28,803
Cumulative Totals		
May 14, 1955	1,321,193	596,665
May 14, 1954	1,261,763	545,880

ICC Bureau Puts 1954 Rate of Return at 3.5%

Applying methods set out by the Interstate Commerce Commission in its Ex Parte 175 rate reports, the Commission's Bureau of Transport Economics and Statistics has calculated that Class I line-haul railroads earned a 3.51% return in 1954. On the basis of the average net investment used by the Association of American Railroads, the 1954 return was 3.28%.

Organizations

Railroad Police Told to Talk to Public More

Railroad police have made an "enviable record" over the years, but the more spectacular cases of theft and losses have been brought under control, with the result that police work has become somewhat routine. This, said George A. Callahan, manager of protection services of the New Haven, has led managements to ask, "Why do we need so many policemen? Why do we need any police department at all?"

Mr. Callahan spoke at the concluding session of the annual meeting, May 18-20, at the Bellevue-Stratford Hotel, Philadelphia, of the Protective Section of the Association of American Railroads. Managements ask these questions about the work of railroad police, he said, because too often protection forces have "made a great secret" of their work. He declared they cannot afford to neglect any opportunities to give management, and the general public, a clearer understanding of what they have done, and what they can do in the future as increased responsibilities come their way.

The public will get better transportation service at lower cost if Congress enacts legislation based on the recent Cabinet Report, the meeting was told by R. G. May, AAR vice-president in charge of the Operations and Maintenance Department. While the report's proposals would not "by themselves put competition among the various carriers on a completely equal basis," he said, they would "go far toward redressing the competitive balance," and he urged the 8,000 railroad police and special agents to familiarize themselves with the purposes of the proposed legislation and to see that their friends and neighbors understand its objectives.

Ralph C. Champlin, vice-president—public relations of the Pennsylvania, spoke along the same lines to the members of what he called the "largest private police force in America—also perhaps the least known and least understood law enforcement agency in the country." He described the "grass roots" community public relations activities initiated by the Eastern Railroads Presidents Conference, and appealed to the protection officers to join in such activities.

"We can sell our cause to people for what it means to their communities," he said. "Railroads must grow if America is to grow. . . . When people understand that their welfare is directly related to the welfare of the railroad industry they will listen to what we have to say and ask how they can help."

Frank M. Ellis of Chicago, chief special agent of the Chicago & North Western system, was elected chairman of the section to succeed T. W. Hamilton, superintendent of police of the Pennsylvania. Zeke Bates, of Amarillo, Tex., superintendent of special service of Santa Fe Western lines, was elected vice-chairman, and H. S. Dewhurst of the AAR staff in Chicago was continued in office as secretary.

Lowe Siddons Renamed Head of C. W. Board

Lowe P. Siddons, traffic manager of the Holly Sugar Corporation and president of the National Industrial Traffic League, has been re-elected general chairman of the Central Western Shippers Advisory Board. R. W. Bagby, traffic manager of Dempster Mill Manufacturing Company, Beatrice, Neb., has been re-elected vice-general chairman, and W. G. Koplin, traffic manager of the Salt Lake Hardware Company, Salt Lake City, has been named general secretary.

The board condemned the federal excise tax on transportation as "unjust and inequitable."

Held at Colorado Springs, May 16-18, this was the board's 33rd annual meeting. The agenda included a tour of the Pueblo plant of the Colorado Fuel & Iron Corp.

New Facilities

UP Improvements Top $13 Million

Two large, and 15 smaller, improvement projects currently approved or in progress on the Union Pacific represent total expenditure of nearly $13.7 million. Largest project involves installation of 265 miles of centralized traffic control and a concurrent 7.5-mi line change between Granger, Wyo., and Pocatello, Idaho. This undertaking, scheduled for completion in October 1956, calls for expenditure of $9,889,600.

At Council Bluffs, Iowa, a new 184 by 260 ft steel and concrete diesel shop is to be constructed and some 74,820 feet of departure yard trackage is to be revised at a total cost of $2,868,290 by December 1956. Icing tracks there are to be extended 2,000 feet at an additional cost of $132,170.

Diesel servicing facilities are being built at North Platte, Neb., ($162,130); Rawlins, Wyo., ($40,100) and Ellis, Kan. ($33,780). These are scheduled for completion in June 1956, August 1955 and December 1955, respectively. A water treating plant will be built at Cheyenne, Wyo., before the end of this year at a cost of $66,640.

Yard tracks are being extended and a yardmaster's control tower is being constructed at Denver at a cost of $120,270. This work will be completed

by October 1. At Kansas City, Mo., freight house facilities are being expanded, as are team track facilities, at a total cost of $558,530. In addition, a pneumatic tube system is being built to connect the freight house with the superintendent's office at a cost of $65,370. These projects will be completed before mid-1956.

A mechanical car washer is being installed at Los Angeles at a cost of $116,200. A 150-ton track scale will be installed at Ellis, Kan., before the end of the year at a cost of $55,160. Improvements at Provo, Utah, include a new yard office, wash and locker room facilities costing $30,000, and a new 15,000-bbl oil storage tank costing $60,000, to be completed in August and December, respectively. Additional yard trackage will be installed at Idaho Falls, Idaho, by September 15 at a cost of $38,000. A new yard office and wash and locker rooms will be provided at The Dalles, Ore., at a cost of $50,910 by October 30. At St. John's, Ore., a 55,000-bbl oil tank with fire protection equipment will be completed by June 30 at a cost of $85,600.

Milwaukee.—Current projects include construction of a new 10-track freight yard at the east limits of the city of Spokane, at a cost of about $500,000. The yard is being built on property acquired by the road for this purpose back in 1910. Scheduled for completion late in September, the yard will have 8.5 miles of track, plus car repair and diesel locomotive servicing facilities. It will have a capacity of 600 cars.

A 65-car interchange track with the Northern Pacific and the Spokane International will be built at Grand Junction, Idaho, on the Metaline Falls line some 23 miles north of Spokane. Further north, at Spirit Lake, a 3,000-ft siding extension is under construction. A new 2,000-ft industrial line to serve the Diamond Match Company is being built at Sullivan. At Plummer Junction, 42 miles east of Spokane, an additional 2,000-ft track is under construction.

Missouri Pacific.—Improvements approved or in progress in the St. Louis area include floodlighting of diesel service tracks and extension of concrete apron on two tracks (company forces, $22,400); air conditioning of the remaining 16 floors of the general office and Plaza office buildings (Natkin Company, St. Louis, $365,430); and flasher light and automatic gate crossing protection at Delor, Bates and Wilmington streets (company forces, $36,100).

At Gale, Ill., Joseph Pohl, Nevada, Mo., is raising track between MPs 116.84 and 117.70, north of North Alexander levee, at a cost of about $209,000. The Chappell Construction Company, DeSoto, Mo., is raising tracks south of the levee to MP 118.61—a project that includes raising two bridges—at a total cost estimated at $169,000. Company forces are installing a 150,000-gal diesel fuel tank at North Little Rock, Ark. ($23,500), and rebuilding bridges near Glenwood ($32,000), near Caddo Gap ($25,000), near Hodge, Mo. ($52,000), near Falls City, Neb. ($36,000) and at Dodson ($26,800).

Two 50-car yard tracks are being constructed at Little Rock with grading by Dickinson-McGeorge, Inc., and remaining work by company forces at a total cost of $68,800. An existing storage tank at McGehee is being converted to handle 55,000 bbl of diesel fuel oil at a cost of $45,000. Offices of cashier, freight agent and assistant freight agent, and general offices in the Kansas City State Line freighthouse, are being air conditioned by W. C. Wiedenmann & Son, Inc., ($22,200).

Grading work on the main-line revision west of Kansas City (Dodson to Red Bridge and Martin City) (*Railway Age*, April 26, 1954, page 35) is being handled by the Brunn Construction Company; and culverts and substructures of bridges by L. G. Barcus & Sons. The remainder of this $1.1- million project will be handled by company forces.

Financial

Santa Fe Buys TP&W

Purchase, for $9,963,000, climaxes several weeks of bidding, in which Pennsylvania and M&StL participated

Control of the Toledo, Peoria & Western has been bought by the Atchison, Topeka & Santa Fe.

His company's purchase, from the estate of George P. McNear, Jr., of 73,800 shares of the TP&W common stock or 82% of the 90,000 shares outstanding, was confirmed May 27 by Fred G. Gurley, Santa Fe president. The price, Mr. Gurley revealed, was $9,963,000, equal to $135 per share. The transaction is subject to approval by the Interstate Commerce Commission.

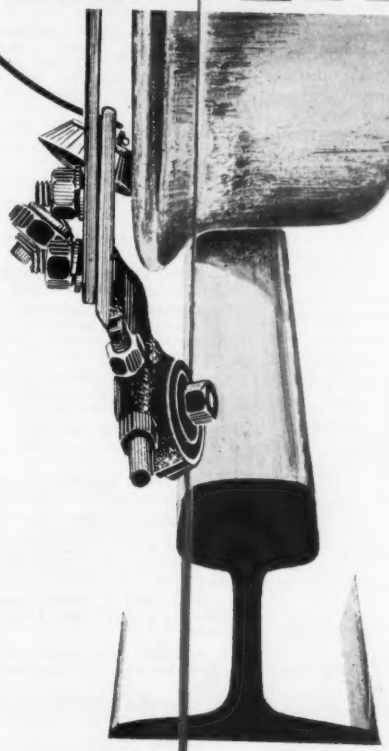
The development apparently surprised many observers, who had felt the TP&W might be acquired by the Minneapolis & St. Louis, since Ben W. Heineman, chairman of the M&StL board, was known to be interested in the 239-mile TP&W, which connects with the M&StL at the latter's southern terminus, Peoria, Ill. Mr. Heineman disclosed late on May 26 that his proposal (*Railway Age*, May 30, page 48) to purchase 82% of the TP&W's outstanding shares for $9,840 000 (approximately $133.33 per share) had not been taken up prior to its expiration time. He had reportedly offered to acquire the remaining 18% of the shares on the same basis.

Whether or not he now proposes to oppose the Santa Fe purchase before the ICC is not known. Informed sources state, however, that he was "completely satisfied" with present TP&W management, and had hoped to

LAST OF THE MISSOURI PACIFIC'S STEAM locomotives on their way recently to be cut up for scrap. Nos. 124 and 40 pulled nine others of their class on the last MP steam-powered trip. The system purchased its first diesels—two yard switchers—in 1937. Its diesel fleet now numbers 873 units, including 688 units placed in service since 1948.

REDUCE COST AND SAVE MORE WITH

Automatic Rail Oiler



How the ARO works

1. Feeds a thin film of oil to the inside corner of the rail, both on the straight course and at curved section of the track.
2. Stops oiling when the wheel is running without deviation or when the wheel is stopped, thus minimizing the consumption of oil.

Some characteristics of the ARO

1. Simple to install, easy to maintain, because only one pair of oilers are needed for a whole train.
2. Absolutely safe in running trains and applying brakes, because oil never comes up to the top of the rails.

Results of the ARO tests

1. It successfully reduced the friction of the rail and the wheel, resulting in less consumption of power and more speed.
2. The wear of the wheel flange was reduced, and 40% of wheel replacement became unnecessary.
3. Replacement of rails was cut to 50%, and power of operating trains was saved by about 10%.

UNITED STATES PAT. No. 2699840
GREAT BRITAIN PAT. No. 721123

For further information apply to

The Kinki Nippon Railway Co., LTD.

Head Office: Uehonmachi 6, Tennoji-ku, Osaka, Japan
Branch Office: Marunouchi Bldg., Chiyoda-ku, Tokyo, Japan

preserve it if his purchase offer had been accepted. Mr. Gurley also has said the Santa Fe plans no changes in TP&W management, as its president, J. Russel Coulter, "is doing a good job."

Earlier Offer—Late in April the Santa Fe and the Pennsylvania—principal western and eastern connections for the TP&W, respectively—had offered trustees of the McNear estate $100 a share for 52% of its TP&W holdings. Mr. Heineman's higher offer followed. The PRR is not a party to the Santa Fe's latest—and winning—offer.

The shares purchased by the Santa Fe had been held by Guy A. Gladson and the Wilmington Trust Company of Delaware—co-trustees of the estate. The desire to sell has been in the interest of diversifying the estate's holdings, it is reported. Mr. McNear purchased the TP&W at a receiver's auction in 1926 and was its president until 1947, when he was killed following prolonged labor difficulties.

Headquartered in an award-winning modern office building at Peoria, the TP&W extends from a connection with the Pennsylvania at Effner, on the Illinois-Indiana state line, directly across Illinois for 224 miles to Keokuk, Iowa, on the Mississippi river. A 10.5-mile extension from LaHarpe, Ill., to Lomax, was built in cooperation with the Santa Fe in 1927, and this route accounts for much of the TP&W's tonnage. There is only one other five-mile branch. The TP&W became fully dieselized in 1951.

ICC Drops Probe Of New B&M Control

Finding that no violation of the Interstate Commerce Act was involved in the recent changes in control and management of the Boston & Maine, the Interstate Commerce Commission has dropped its investigation of the matter.

The investigation was instituted in March to inquire into charges that those acquiring the B&M were interests controlling the New Haven (*Railway Age*, April 4, page 54). The change in B&M control came after its annual meeting in April (*Railway Age*, April 18, page 16).

The commission dropped its inquiry after finding that the record warranted the following conclusions of fact:

1. That the evidence does not establish that the group who sought to obtain control of the B&M, and succeeded, represented theselves as acting for [NH President Patrick B.] McGinnis or the New Haven.

2. That no relationship as such is shown to exist between the NH and the new board of directors of the B&M, except for [former NH President F. C.] Dumaine's presidency of a subsidiary of the former.

3. That McGinnis is not shown to own any of the stock of the B&M.

4. That it is not established by the evidence that the new directors of the B&M are under the control of the NH or of McGinnis.

Chicago & North Western.—*Proxy Contest.*—Morton Weinress, candidate for director of the C&NW Stockholders Committee (*Railway Age*, May 23, page 13), was elected a director at the annual meeting held in Chicago, May 17 and 18. Elected with Mr. Weinress were five members of the six-man management slate. Frederick W. Walker, a board member since 1944, withdrew his name as candidate for reelection.

Missouri Pacific.—*Agreed Plan Submitted for Vote.*—The ICC has submitted the agreed plan for reorganization of this road to eligible stockholders and creditors for their approval. Deadline for ballots to be filed with the commission was fixed as June 9. The commission ordered that eligible voters will be holders of claims and securities (record holders of stock and registered bonds) at the close of business May 10. The plan as approved by the ICC last August (*Railway Age*, August 9, page 14) and subsequently by the U.S. District Court at St. Louis, was agreed to by most major interests in the proceeding, including Alleghany Corporation. The plan gives control of the MP to old-company preferred stockholders and gives holders of old-company common stock one share of new Class B common for each 20 shares of old.

New York Central.—*Shareholders Approve Reimbursement for Proxy-Contest Costs.*—NYC stockholders at the annual meeting in Albany, N.Y., May 26, voted to reimburse Alleghany Corporation and certain present NYC directors for expenses incurred in last year's proxy contest (*Railway Age*, April 25, page 14). Shares voted in favor of reimbursement totaled 4,899,495, and shares opposed amounted to 457,129.

Securities

Boston & Maine.—*To Exchange Preferred Stock for Debentures.*—Directors of the B&M have authorized the filing with the ICC of an application for permission to issue income debenture bonds, series B, maturing January 1, 2006, in an amount not to exceed $27,500,000, to be exchanged, on a voluntary basis, for the road's 275,000 shares of outstanding preferred stock. The proposed debentures, if approved, are to bear interest at the rate of 5%, to the extent earned by the company during the preceding year, with a sinking fund at the rate of ½ of 1%, if earned, on the amount of the original issue of debentures. Preferred stock would be exchangeable for the debentures at the rate of one $100-par share for $100 principal amount of debentures.

Authorization

NEW YORK, CHICAGO & ST. LOUIS.—To assume liability for $4,080,000 of equipment trust certificates to finance in part the purchase of 32 diesel-electric locomotives at an estimated total cost of $5,119,504 (*Railway Age*, May 2, page 68). Division 4 approved sale of the certificates at 99.14, with an interest rate of 2⅞%—the bid of Halsey, Stuart & Co. and two associates, which will make the annual cost of the proceeds to the railroad about 3.01%. The certificates, dated June 15, will mature in 30 semiannual installments of $136,000 each, beginning December 15. They were reoffered to the public at prices yielding from 2.3 to 3%, according to maturity.

Dividends Declared

ALABAMA GREAT SOUTHERN.—ordinary, $4, semiannual; 6% participating preferred, $4, semiannual; both payable June 22 to holders of record May 23.

ATCHISON, TOPEKA & SANTA FE.—5% noncumulative preferred, $1.25, semiannual, payable August 1 to holders of record June 30.

BESSEMER & LAKE ERIE.—$1.50, semiannual, payable June 1 to holders of record May 16.

BOSTON & ALBANY.—$2.50, payable June 30 to holders of record June 2.

CHICAGO GREAT WESTERN.—common, 2½% stock dividend, payable about July 27, pending ICC approval, to holders of record June 27; common, 25¢, payable July 1 to holders of record June 15; 5% preferred, 62½¢, quarterly, payable June 30 to holders of record June 15.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—$4, semiannual, payable June 20 to holders of record June 3.

DENVER & RIO GRANDE WESTERN.—new common, initial quarterly, 50¢, payable June 20 to holders of record June 10.

ERIE.—37½¢, quarterly, payable June 30 to holders of record June 6.

ILLINOIS CENTRAL.—75¢, quarterly, payable July 1 to holders of record June 1.

KANSAS CITY SOUTHERN.—common, 75¢, payable June 15 to holders of record May 31; 4% preferred, 50¢, quarterly, payable July 15 to holders of record June 30.

KANSAS, OKLAHOMA & GULF.—6% preferred A, B and C, $2, semiannual, payable June 1 to holders of record May 21.

NASHVILLE & DECATUR.—7½% guaranteed, 93¾¢, semiannual, payable July 1 to holders of record June 20.

NORTHERN PACIFIC.—75¢, quarterly, payable July 26 to holders of record July 5.

PITTSBURGH, FORT WAYNE & CHICAGO.—common, $1.75, quarterly, payable July 1 to holders of record June 10; 7% guaranteed, $1.75, quarterly, payable July 5 to holders of record June 10.

PITTSFIELD & NORTH ADAMS.—$2.50, semiannual, payable July 1 to holders of record June 16.

READING.—4% second preferred, 50¢, quarterly, payable July 14 to holders of record June 23.

SOUTHERN PACIFIC.—75¢, quarterly, payable June 20 to holders of record May 31.

UNION PACIFIC.—$1.25, quarterly, payable July 1 to holders of record June 6.

WABASH.—$2, payable June 24 to holders of record June 17.

WHEELING & LAKE ERIE.—$1.43¾, quarterly; 4% prior lien, $1, quarterly; both payable August 1 to holders of record July 15.

Security Price Averages

	May 31	Prev. Week	Last Year
Average price of 20 representative railway stocks	96.58	94.56	66.45
Average price of 20 representative railway bonds	98.30	98.45	94.71

(*More News on page 46*)

Federal PRESENTS

To American Railroads...

The Industry's Most Comprehensive

MAIN LINE CONTROL

FOR RAILROAD RADIO SYSTEMS

Federal Main Line Control is a fast, flexible, and highly versatile system . . . engineered for the rugged communication requirements of dispatchers, wayside stations, trains and other mobile units.

The system operates over any train dispatching telephone circuit, including carrier. Half-second tone codes connect or disconnect wayside stations individually, using Federal's famous "Selecto-Call" tuned reed system.

Train operators can signal the dispatcher over the regular dispatching circuits without disrupting conversation in progress. Dispatchers can answer radio calls without having to know which station called.

Dependable dispatcher-to-wayside intercom is provided through full-range compression amplifiers . . . insuring constant-volume speech under all conditions.

An outstanding optional feature is radio patch . . . providing communications *beyond breaks* in dispatching circuits.

Federal Mail Line Control is a product of the worldwide telephone, carrier, remote control, microwave, and mobile radio experience of IT&T engineers. For complete data on your particular problems, write to Federal's Railroad Industry Sales Organization, Dept. P-847.

● **Providing fast, selective communication between dispatchers and radio-equipped trains . . . via locally or remotely-controlled wayside stations (without interference with normal dispatching circuits) . . . also emergency radio patch to bridge breaks in dispatching wire lines.**

WAYSIDE STATION
Main Line Control Wall Cabinet

DISPATCHER'S Station Control Equipment

Federal

A DIVISION OF IT&T

Federal Telephone and Radio Company
A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
100 KINGSLAND ROAD • CLIFTON, NEW JERSEY
In Canada: Standard Telephones and Cables Mfg. Co. (Canada) Ltd., Montreal, P. Q.
Export Distributors: International Standard Electric Corp., 67 Broad St., New York

Questions and Answers FOR THE TRANSPORTATION DEPARTMENT

How can a railroad rate switch engine efficiency?

Is it practicable to establish reasonably precise standards of work for each crew?

Work standards can be set.

[In this column, on May 23, we carried two answers to these questions. Both roads' representatives rated engine efficiency on the basis of cars handled per engine-hour. Here is a somewhat different slant from an eastern railroad.—*G.C.R.*]

"On the Lackawanna switch engine efficiency is computed on the basis of cars handled per engine-hour plus cost per car handled. Incidentally, we do not consider a car handled until it has been dispatched from a terminal. In other words, the term 'car forwarded' could well be substituted for 'car handled,' because no credit is received for the car handled until it is forwarded.

"We have experienced no difficulty in establishing reasonably precise standards of work for each crew. In this connection there are, of course, many things to be taken into consideration, the physical characteristics of a yard and the type of work being performed by a given crew being among the most important. In other words, it is difficult, and in my judgment, unfair, to attempt to set up a standard of work in a given yard and then attempt to apply the same standard in all other yards on the railroad. This simply will not work. All our statistics, so far as yard operations are concerned, are based on comparing a given yard against the operation for the same yard for the corresponding period of the previous year. It might be of interest to know that each year, for the past several years, the efficiency based on cars handled per engine-hour has been showing a small but steady improvement in all our major yards."—*J. A. Craddock, superintendent, Delaware, Lackawanna & Western.*

[In recent years work standards have been set for operations formerly considered not easily measurable in quantitative terms. With some of the industrial engineering techniques being introduced into railroading it occurs to us that perhaps the efficiency of a crew switching the lead in a flat yard, for example, could be measured against fairly established time standards. If so, we should be able to get away from many of our "seat-of-the-pants" judgments of crew efficiency. Maybe we could "know" rather than "feel." I would welcome any comments.—*G.C.R.*]

How should the charge for heavy-duty flat cars be prorated when a load has to be transferred from the car on which it was first loaded?

Per Diem Rule 21—Charges for heavy-duty flats.

Road A loads one of its own heavy-duty flat cars (subject to per diem rule 21) to a western destination via roads A, B, C, D, E, F and G. En route on road C, the car breaks down and has to be destroyed (not, however, through fault of road C). Road C transfers the load to one of its own heavy-duty flats, which transports it to the original billed destination. Road C requests road A for an adjustment of the charges made against roads D, E, F, and G because of the substitution of road C's car. What adjustment should be made?

"Under the circumstances, it would appear that road C is entitled to the amounts originally billed by road A against roads D, E, F and G."—*Eastern Association of Car Service Officers.*

A heavy-duty flat is held for disposition by a non-owner, upon request of the Car Service Division, AAR. Is the holding road entitled to relief for per diem paid to the car owner?

"Paragraph C of Car Service Division circular 439 reads, in part: 'In absence of specific advice and authorization (a) do not hold car empty for disposition. . . .' If a car is held upon request, there is no authority for granting per diem relief. It would appear that a road which incurs burdensome per diem costs due to holding heavy-duty flats for disposition should request relief either direct from the car owner or through the Car Service Division, which requested the holding."—*Eastern Association of Car Service Officers.*

CONDUCTED BY G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, *Railway Age*, 30 Church Street, New York 7.

How OXWELD Trade-Mark Welding Rods Keep Diesels in Service

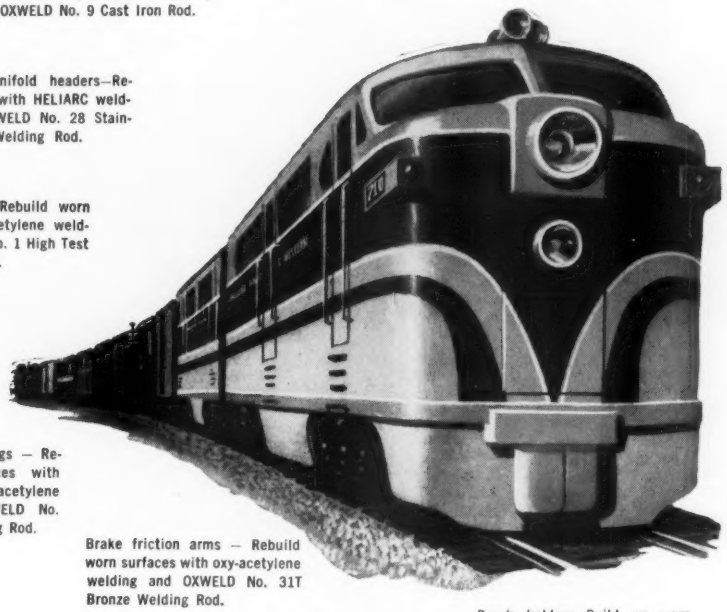
Aluminum pistons—Repair cracks and fill in ring grooves with HELIARC or sigma welding and OXWELD No. 23 Welding Rod or Wire.

Aluminum radiator parts—Repair cracks with HELIARC or sigma welding and OXWELD No. 23 Welding Rod or Wire.

Cast iron cylinder heads — Repair cracks and rebuild valve seats with HELIARC or oxy-acetylene welding and OXWELD No. 9 Cast Iron Rod.

Aluminum cooling blades — Repair breaks and cracks with HELIARC welding and OXWELD No. 23 Aluminum Welding Rod.

Exhaust manifold headers—Repair cracks with HELIARC welding and OXWELD No. 28 Stainless Steel Welding Rod.



Intake and exhaust valves — Build up worn faces with oxy-acetylene welding and HAYNES STELLITE Alloy No. 6 Rod.

Truck equalizers—Rebuild worn areas with oxy-acetylene welding and OXWELD No. 1 High Test Steel Welding Rod.

Diesel cylinder liners — Repair and adapt for water passage with HELIARC and oxy-acetylene welding and OXWELD No. 31T Bronze and No. 9 Cast Iron Welding Rods.

Motor suspension bearings — Rebuild worn face with HELIARC or oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Axle thrust bearings — Renew worn surfaces with HELIARC or oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Brake friction arms — Rebuild worn surfaces with oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Malleable iron brake heads—Rebuild worn surfaces with oxy-acetylene welding and OXWELD No. 25M Bronze Welding Rod.

Compressor clutch sleeves — Renew worn teeth with oxy-acetylene welding and OXWELD No. 31T Bronze Welding Rod.

Brush holders—Build up worn surfaces with oxy-acetylene welding and OXWELD No. 27 Low-Temperature Bronze Welding Rod.

Here are some parts regularly restored by welding in leading diesel shops today. Repair welding returns damaged or worn parts to service quickly, maintenance welding keeps them there. In both types of work, OXWELD welding rods and wires assure strong welds that make diesel parts as good as new. That's because each OXWELD welding rod and wire is designed to do the best job possible—to insure an excellent weld.

Your diesel shop also can realize attractive savings by using OXWELD welding rods and wires for these and similar jobs. For further details, write LINDE for more information.

"Heliarc," "Oxweld," and "Haynes Stellite" are registered trade-marks of Union Carbide and Carbon Corporation.

RAILROAD DEPARTMENT

Linde Air Products Company

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

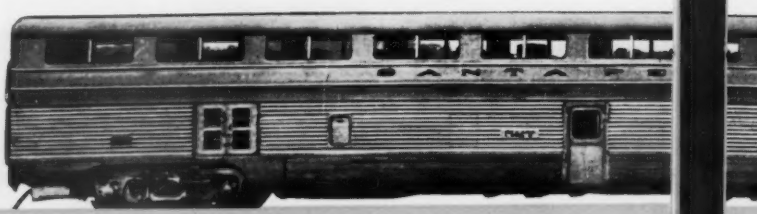
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY
Division of Union Carbide Canada Limited, Toronto

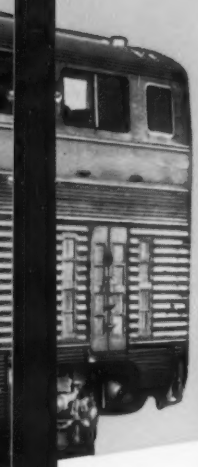
Supplying to railroads the complete line of welding and cutting materials and modern methods furnished for over forty years under the familiar symbol - - -

For Santa Fe's New El Capitan

47 Hi-Level Budd Stainless Steel Cars

- *25 Hi-Level, seventy-two passenger, chair cars*
- *10 Hi-Level, sixty-eight passenger, chair cars*
- *6 Hi-Level, eighty passenger, full-length diners*
- *6 eighty-eight passenger, full-length dome type lounge cars*





● The HI-LEVEL chair cars permit the Santa Fe to carry more passengers with fewer cars. In fact, ten of these new cars can perform the work of sixteen conventional cars. This not only lowers costs materially, but also releases diesel locomotive units for other assignments.

Everybody rides on an upper level, with the full length of the car available for revenue seats. The cars are fifteen feet six inches high. And the passengers think they're wonderful.

Housed below are capacious lounges and luggage storage racks. Also, the cars' utilities—air-conditioning equipment and so on. All enclosed for easy inspection and maintenance, regardless of the weather.

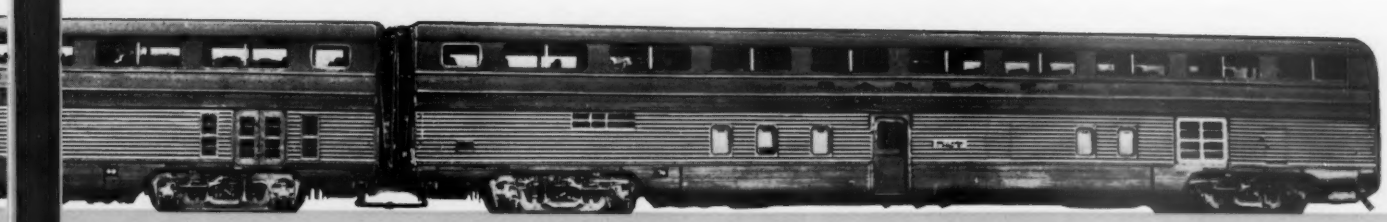
About a year ago the Santa Fe placed two of these HI-LEVEL chair cars in experimental service and asked their passengers how they liked them. The response was overwhelmingly favorable.

Although we built those cars last year, because of their unique design it was decided to let them compile their own operating and traffic record before saying much about them.

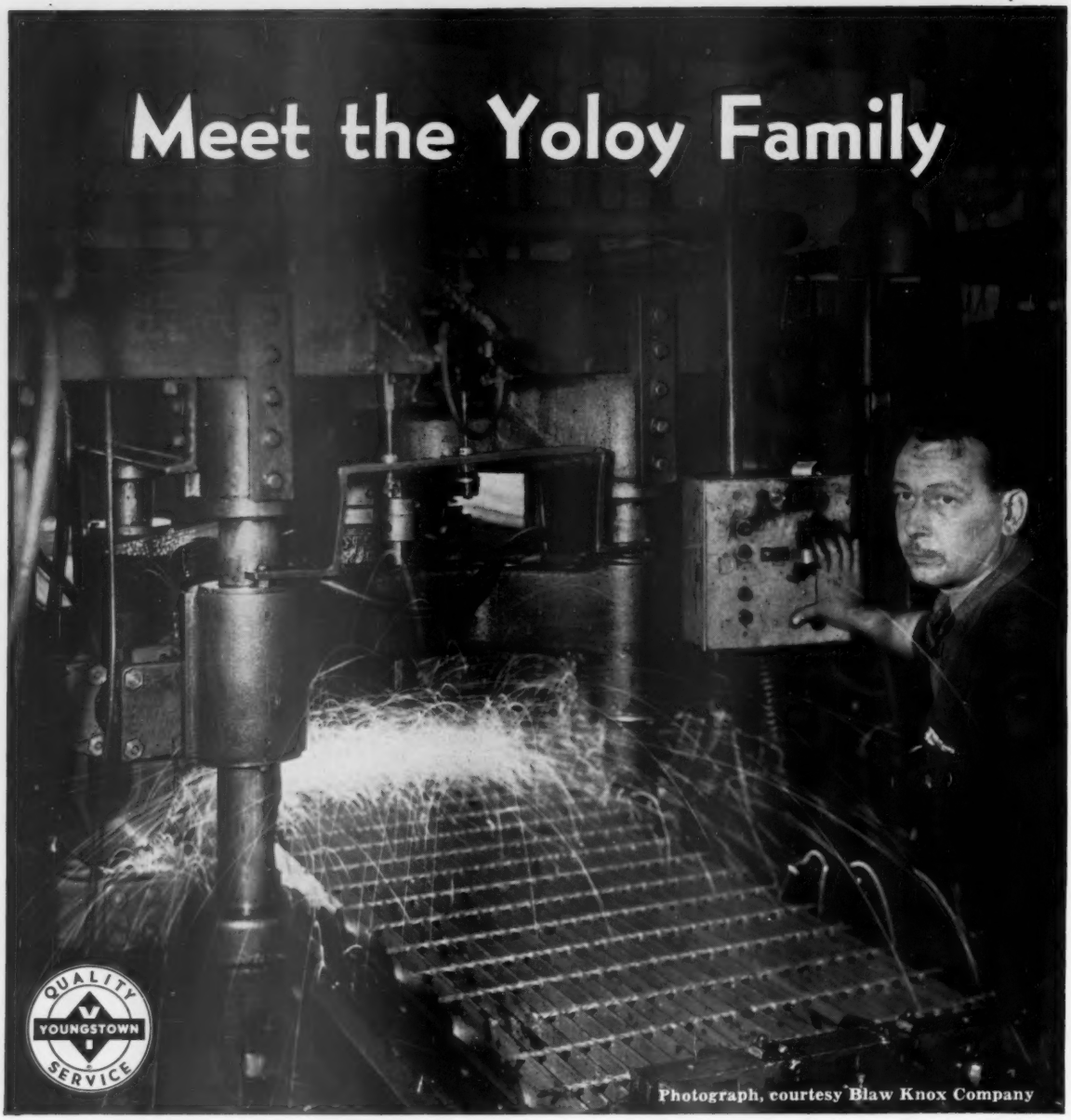
Doesn't look now as though much needs to be said. An order for forty-seven more says plenty, not only about passenger enthusiasm but also about operating results.

They're something new and important to the railway passenger carrying business. And, they're built by Budd. The Budd Company, Phila. 15.

Budd



Meet the Yoloy Family



Photograph, courtesy Blaw Knox Company

●The Yoloy Family of steels are available to fabricators and users who require a steel that's high in resistance to corrosion, shock, vibration and is easy to fabricate and weld. The illustration shows fabrication of "Electro-forged"* grating, using Yoloy E steels, where long life and safety require superior properties. Phone or write our nearest District Sales Office for further information.

*Registered—Blaw Knox Company

Youngstown

YOLOY *(Nickel-Copper)* Low Alloy High Strength Steel
YOLOY E *(Nickel-Chrome-Copper)* Low Alloy High Strength Steel
YOLOY C *(Chrome-Copper)* Corrosion Resistant Steel

THE YOUNGSTOWN SHEET AND TUBE COMPANY *Manufacturers of Carbon, Alloy and Yoloy Steel*

General Offices: Youngstown, Ohio - District Sales Offices in Principal Cities

SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT - MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - BAR SHAPES - WIRE - HOT ROLLED RODS - COKE TIN PLATE - ELECTROLYTIC TIN PLATE - RAILROAD TRACK SPIKES

Guards Crossings Day and Night!

Great Northern Crossing, Wayzata, Minnesota

Crossbucks of "SCOTCHLITE" REFLECTIVE SHEETING *cut crossing accidents, protect motorists and trains by reflected light!*

The photographs above tell a bright story of crossing safety 24 hours a day! Reflecting light from approaching autos, crossbucks of "Scotchlite" Sheeting can be seen from ½ mile away at night, giving clear warning of a grade crossing ahead. The smooth, easy-to-clean surface of "Scotchlite" Sheeting gives years of trouble-free service . . . and it stays vivid and bright, always, with a minimum of field maintenance.

Leading railroads throughout the nation are switching now to efficient grade crossing and roadway signs of "Scotchlite" Sheeting. And they're doing it through the central sign shop plan. With one shop, a railroad with a vacuum applicator to bond "Scotchlite" Sheeting to the sign backing can economically reflectorize its entire system. This easy, system-wide change-over is just one more example of the efficiency and economy a central sign shop can bring your road.

Get the facts now! For complete details and plans for a money saving model sign shop, send in the coupon below.

WIDE ANGLE FLAT-TOP®
REG. U. S. PAT. OFF.

SCOTCHLITE
BRAND
REFLECTIVE SHEETING

The terms "Scotchlite" and "Flat-Top" are registered trademarks of Minnesota Mining & Mfg. Co., St. Paul 6, Minn. General Export: 99 Park Avenue, New York 16, N. Y. In Canada: P.O. Box 757, London, Ontario.

3M COMPANY

Minnesota Mining & Mfg. Co.
Dept. RA-663, St. Paul 6, Minn.

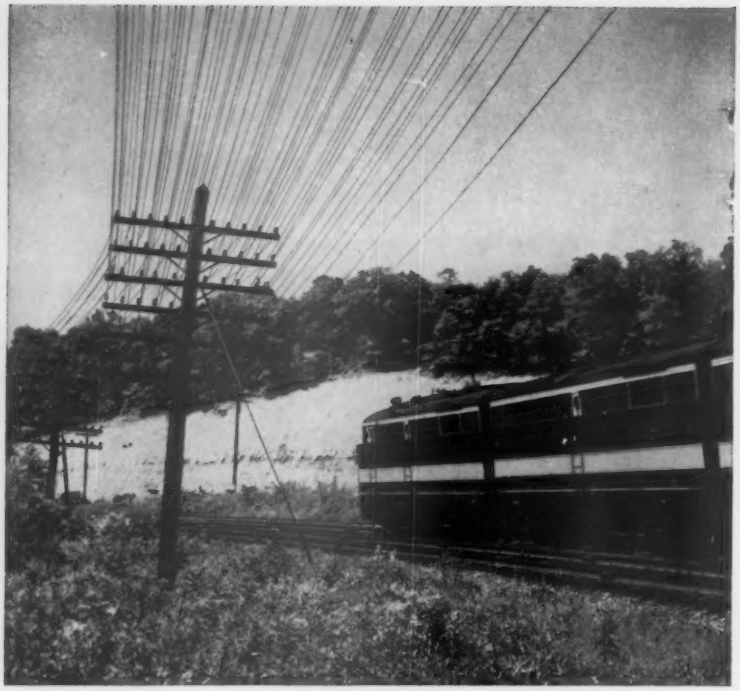
Please send complete details on railroad reflectorization, including plans for a model sign shop.

Name_____

Company_____

Address_____

City_____ Zone____ State_____



POLES...CROSSARMS...HARDWARE

...via GraybaR

Everything you need for pole-line construction and maintenance

Poles to meet any preference are distributed by Graybar. Full-length, pressure-treated Southern Pine, Fir and Cedar . . . butt-treated Northern and Western Cedar — all are carefully selected and processed to provide maximum strength and durability.

Crossarms too, are available through your near-by Graybar warehouse. Selected for long life, and seasoned under rigid supervision they assure a wide margin of safety in the line.

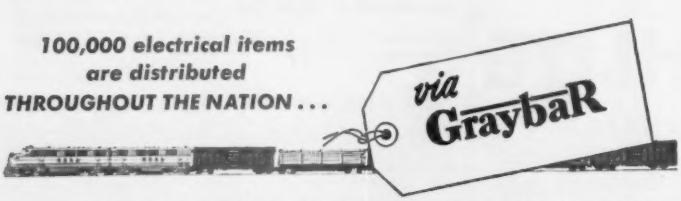
Pole-line Hardware is supplied promptly and efficiently via Graybar. Made by Hubbard — one of the nation's leading electrical manufacturers — it's a brand name railroad men know and respect.

It pays to order *all* your pole line items for both construction or maintenance via Graybar — you save the time and expense of multiple inquiries . . . you get products that are dependable and give long service life.

In addition, a near-by Graybar Railroad Specialist will be glad to consult with you on problems arising in the fields of communication, lighting, electrical maintenance of equipment, and power distribution. Make it a point to discuss your electrical requirements with him at any time. *Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

327-206

100,000 electrical items are distributed THROUGHOUT THE NATION . . .



OFFICES AND WAREHOUSES IN OVER 100 PRINCIPAL CITIES

Current Publications

PERIODICAL ARTICLE

STILL PUSHING NEW FRONTIERS. Business Week, May 14, 1955, pp. 41-46. McGraw-Hill Publishing Company, 330 W. 42nd st., New York 36. Limited supply of tear-sheets available free.

The Canadian Pacific is helping to open new frontiers, but its prime business still is railroading.

ANNUALS

ACCIDENT BULLETIN, No. 122. Summary and Analysis of Accidents on Steam Railways in the United States Subject to the Interstate Commerce Act. Calendar Year 1953. 95 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from Government Printing Office, Washington 25, D.C. 55¢.

●

PRELIMINARY ABSTRACT OF RAILWAY STATISTICS (Steam Railways, Railway Express Agency, and Pullman Company) for Year Ended December 31, 1953. 50 pages. Prepared by Bureau of Transport Economics & Statistics, Interstate Commerce Commission. Available from Government Printing Office, Washington 25, D.C. 55¢.

BOOKS

JAMES J. HILL, by Stewart H. Holbrook. 205 pages. Alfred A. Knopf, 501 Madison ave., New York 22. $2.50.

One of a "Great Life in Brief" series of biographies which are not intended for specialists, but for intelligent adults who have a sound curiosity about lives and accomplishments of notable people.

●

ELECTRIC RAILWAY ENGINEERING, by T. Ferguson. 416 pages, drawings, charts. MacDonald & Evans, Ltd., 8 John st., Bedford Row, London, W.C.1, England. $8.05.

The author has had 50 years experience in the field of electric traction. During his professional career, he was in charge of general engineering work of the electric traction department of Metropolitan-Vickers Electrical Company and its predecessor, British Westinghouse Electric & Manufacturing Co. While the book includes 132 drawings and charts, there are no photographs or constructional drawings and no space is used to describe current equipment which is constantly changing in design and is often obsolescent. The book deals rather with unchanging fundamentals and covers such subjects as motive power, traction motors, braking, train resistance, permissible speeds, adhesion, transmission and conversion, comparison between self-contained power units and straight-electric traction systems and examples of railway electrification.

SWITZERLAND'S AMAZING RAILWAYS, by Cecil J. Allen. 179 pages, illustrations, maps. Thomas Nelson & Sons, Ltd., Parkside Works, Edinburgh 9, Scotland. 25s.

Mr. Allen's book contains a general account of the history and layout of Switzerland's railways, and chapters on many particular topics—the battle with snow and ice; two famous Transalpine main lines, the Gotthard and the Lötschberg; Alpine tunnels; the Glacier Express; mountain-climbing by such means of transportation as rack-and-pinion, funicular and chair-lift; the railway ascent of the Jungfraujoch; and some of Switzerland's most interesting minor railways. A final chapter on locomotives, rolling stock and railway operation has been written especially for railroad enthusiasts; and an appendix contains much information not previously available in English —tables of lengths, heights climbed, gradients and timings. There are nearly 200 excellent half-tone illustrations printed on a new fluorescent art-paper.

TRADE PUBLICATIONS

M.A.N. DIESEL RAILCARS. 10 pages, illustrations, drawings. Maschinenfabrik Augsburg-Nürnberg A.G., Nürnberg, Germany. Free.

Briefly describes diesel-mechanical, diesel-hydraulic and diesel-electric railcars, and two-coach, three-coach and four-coach units. Floor plans are included.

•

M.A.N. FOR RAILROAD TRAFFIC. Four pages. Maschinenfabrik Augsburg-Nürnberg A. G., Nürnberg, Germany. Free.

The M. A. N. works at Nürnberg, Augsburg and Gustavsburg produce railroad equipment, diesel engines and steel buildings, turntables, bridges, etc. A number of these products are illustrated in this booklet.

•

THE "PROS AND CONS" OF LEASING INDUSTRIAL TRUCKS. 4 pages. Elwell-Parker Electric Company, 4205 St. Clair ave., Cleveland 3. Free.

This folder details such topics as: Effects on working capital; tax considerations; the lease as a hedge against inflation; write-offs in big profit years; leasing vs. borrowing capital; short term requirements; and many others. Included among the basic advantages of leasing as listed in the folder are: (1) The lease permits using equipment when working capital is short; (2) the lease frees working capital for other uses which may be more important or more profitable; (3) return on freed capital often exceeds leasing interest charge; (4) leasing permits fast tax write-off; (5) leasing offers a hedge against inflation; (6) leasing permits 100% financing; (7) leasing permits tax write-off in big profit years; and (8) the lease provides an operating budget control.

under its own power at 28 mph

D Tournapull can travel 10, 25 or 50 miles...complete one or more average maintenance jobs...and get back to its original assignment, all in one day! Its 28 mph work and travel speeds let you handle emergencies as soon as they are reported. On a typical day, a "D" can complete a schedule like this:

7:45 A.M. Station agent reports washout 30 miles away.

8:00 A.M. Operator reports for work, gets assignment, climbs on Tournapull, and drives off. No waiting for flatbed, no loading or blocking. Rig averages 20 to 28 mph through traffic.

9:30 A.M. Arrives at site.

9:31 A.M. Goes to work immediately. No time lost unloading, planking, etc. Self-loading from right-of-way pits 500′ from the washout, the "D" hauls and spreads 100 cubic yards of clay fill in about an hour.

10:30 A.M. Using bulldozer blade, the "D" spends a half-hour finish-grading. One piece of equipment and one operator handle entire assignment.

11:00 A.M. Operator drives rig over main highways 20 miles to next assignment — trimming side-slopes to improve drainage.

12:00 Noon Arrives at site, takes hour for lunch.

1:00 P.M. Starts moving dirt to slough a mile away. Self-loads, hauls along right-of-way, dumps 5 loads in an hour. Finishes slopes, spreads fill with dozer blade.

2:00 P.M. Drives 15 miles to help enlarge yard, build sidings.

2:45 P.M. Starts grading . . . works steadily 'til 4:30. In 1¾ hours, self-loaded "D" moves 140 cubic yards of clay over average 1400′ cycles.

4:30 P.M. Operator and rig take off for headquarters, make 10-mile trip over heavily-traveled highways in ½ hour, are back at 5 o'clock.

Find out what D Tournapull can do for your road in giving better, faster service all year 'round. Send coupon for more information.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-821-RR-z

FREE . . . "The Railroad Handyman"

20-page book shows how the 7-yd self-loading D Tournapull cuts time and costs on right-of-way maintenance. Send coupon for your free copy. No obligation. Also ask to see our 16 mm. full-color movie, "Clear the Track."

Name ..... Title .....

Division .....

Railroad .....

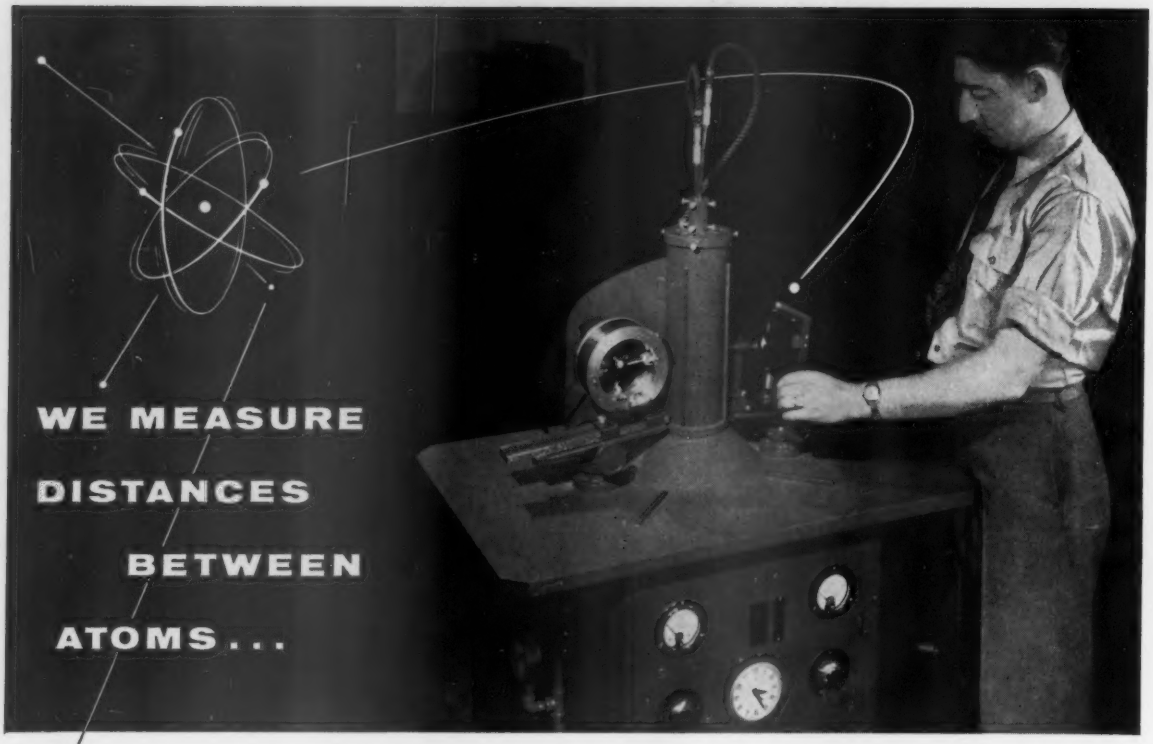
Address .....

DP-821-RR-z

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company



TO GIVE YOU *Advance Design* BATTERIES!

The X-Ray Diffraction Unit shown above is one of the few instruments of its kind being used in basic battery research. It identifies complex metallic compounds which cannot be identified practically by chemical means. It does this by actually indicating on film the distances between atoms, enabling Gould engineers to study atomic structure.

This instrument . . . this research . . . is revealing hitherto unknown facts about the relationship between molecular activity and battery performance . . . pointing the way toward more powerful, longer lasting active materials. That's why you get *better* batteries when you buy Gould!

For the full story on Gould Research, send for Booklet 749.

America's Finest!
GOULD
KATHANODE BATTERIES
for Diesel Starting

©1955 Gould-National Batteries, Inc.

GOULD
Batteries

GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.

"BETTER BATTERIES THROUGH RESEARCH"

Always Use Gould-National Automobile and Truck Batteries

Reorganized RBA Should Do Great Things

The reorganization of the Railway Business Association—its new name is *Railway Progress Institute*—gives promise of bringing a great deal of value to the railroads, their suppliers and the national welfare. The names of the great companies whose officers comprise the institute's executive committee bear witness to the personal and corporate substance which has accepted leadership. These companies include American Brake Shoe, American Steel Foundries, General American Transportation, General Motors, Standard Railway Equipment, U.S. Steel, and Westinghouse Air Brake.

But to make the contribution to the welfare of the railroads and the nation that it should, the institute needs more than outstanding leadership and adequate financing. It also needs the understanding and cooperation of all railroad people and other interests friendly to the railroads. The situation is a complex one, and the complexities can be simplified and overcome only to the degree that they are realized and appreciated.

One major problem the new RPI will inevitably face will be the loss of some members because of the greatly increased dues basis. Dues are calculated on the basis of gross sales, direct and indirect, to the railroads—and the minimum has been set at $1,000. There are many smaller concerns and individuals in the railroad supply business with revenues which will scarcely justify so large a fee. Such companies and individuals will, however, be able to afford the more modest dues structure of the Federation for Railway Progress—with which the RPI is closely affiliated.

While no formal action has yet been taken to indicate precisely the revenue characteristics which should lead a company to choose between the two associated "railway progress" organizations, the staffs of the associations will doubtless work out some guiding principles in this area.

The important considerations—as it seems to us—are these: (1) that companies friendly to the railroads and whose sales to the railroads are substantial should seriously consider joining (or retaining their membership in) the RPI; and (2) that smaller companies should have no qualms about transferring from RPI to FRP if their sales do not justify membership in the higher-dues organization. Membership in either organization should evidence equal zeal for the cause of legitimate progress of the railroad industry.

The specific program of educational activities to be undertaken by the Railway Progress Institute has not been announced—and probably will not be until the organization has chosen its full-time chief executive. But there's no doubt whatever that the program to be undertaken will be constructive and effective. The institute's leadership is the best guarantee of that.

Young as it is, the new institute has already accomplished a great deal. For one thing, it has established connections on a continuing basis with the Federation for Railway Progress—thereby materially reducing a lot of unnecessarily duplicative effort. This affiliation has also been helpful in healing the schism which had existed among associations in the railroad industry. In addition, the events leading up to the RPI's formation have required a lot of conferences over a period of months among quite a number of important railway suppliers. These conferences have been highly educational—and those who have participated in them know each other a lot better than they did before; and they know a lot more about railroad problems than they did before.

In being a friend of the railroads, the RPI is in no sense unfriendly to other agencies of transportation. Indeed, many of the participating companies are important suppliers to agencies of transportation other than the railroads. These RPI suppliers are decidedly, then, not a "pressure group" seeking special privileges for the railroads. On the contrary, the institute's purpose is to contribute its share to the public understanding of railroad problems—to the end that the railroads should not continue to be handicapped in competing equitably for the traffic they are economically qualified to handle.

One of the important contributing factors to this constructive development was the activity, about a year ago, of the so-called Committee of Railway Suppliers. That committee, it will be recalled, conducted a short-run but highly successful publicity campaign in the railroads' behalf. Its campaign gave dramatic evidence of growing impatience among important suppliers at the relative inactivity of the industry as a whole in support of the beleaguered railroads. With that demonstration of zealous interest in high places, it was a foregone conclusion that intensified activity by the organized supply industry was coming—in one way or another.

CRUCIAL MOMENT in the welding process. Pressure of the gases created by volatilized metal, blows molten metal, slag and impurities from the rail ends. Flash guard was left open here to get full effect of flashing process.

LATEST IN BUTT-WELDING . . .

Long Rails by Flash Process

Technique developed in Europe for fabrication of continuous rail has been adapted for use here and is now producing welds on the Santa Fe

At Albuquerque, N. M., a new chapter is being written in the history of continuous rail. There the Santa Fe is taking short ones (39 ft) and fashioning them into long ones (about 1,440 ft) by the Matisa-Schlatter flash butt-welding technique. Originally developed in Switzerland and widely used in Europe, particularly Germany, this method has been adapted for use in this country by the Matisa Equipment Corporation. The set-up at Albuquerque represents the first use of this process in the United States.

The butt-welding operation at Albuquerque is of unusual significance for another reason. It signals the second year of a large-scale program on the Santa Fe of laying continuous-welded rail when making rail renewals. Last year this road laid a total of 38.7 miles of welded rail, all fabricated by the Oxweld oxyacetylene

FLASH BUTT-WELDING EXPLAINED

When electric current is passed between two adjacent metal surfaces the resistance generates heat. Under proper conditions of electrical current and positioning of the two objects, the heat is sufficient to bring the surfaces to welding temperature. This, sans details and refinements, is the basis of the flash butt-welding process.

In the Matisa-Schlatter version of this process, the rail ends are clamped in two heads or platens in the welding machine. One of the platens is movable, the other is stationary. During the welding process, with the ends of two adjoining rails clamped in the platens, electrical current is applied. At the same time the rail held by the movable platen is oscillated toward and away from the fixed rail, thereby repeatedly making and breaking the electrical contact between the ends of the rails. The result is that the rail ends are quickly preheated to a temperature of approximately 2,000 deg F.

As soon as the proper preheat temperature is reached, the flashing operation, thermostatically controlled, occurs automatically. In this phase the two rail ends are brought together. When they touch the resultant arc causes the metal of the two surfaces to be volatilized. At the same time gas pressure is built up at the interface, which does two things. It excludes air, thereby keeping the non-volatilized metal chemically clean, and it forcibly ejects all molten metal and impurities from the interface.

It is at this stage that the rail ends are brought to a forging or welding temperature. As soon as sufficient metal has been "flashed" off the rail ends to assure intimate contact over the entire interface, an upsetting process starts. During this phase the rail ends are pushed together under high pressure, squeezing out all of the molten metal from the interface and upsetting the hot, but still solid, underlying metal. This completes the welding operation.

pressure-welding process. This year, 103 track-miles of continuous rail have been authorized. Sixty-three miles will be joined by the Matisa-Schlatter process and 40 by the Oxweld method.

The first 27 track-miles of the flash-welded rails are being fabricated at Albuquerque and will be laid on the Santa Fe's main line between Rosario, N. M., and Bernalillo on the New Mexico division. Following this, the equipment will be moved to Waynoka, Okla. There it will weld about 7½ miles for use on the Oklahoma division between Curtis and Mooreland, Okla. Finally, the equipment will move to Chillicothe, Ill., to weld slightly more than 28 miles which will be laid between Edelstein, Ill., and Knox on the Illinois division.

Mobility Was Problem

Welding of continuous rail in Europe is done at so-called "depot" or permanent set-ups. This practice is not generally considered practical here because of the greater distances the long rails would have to be transported. Development of the Matisa-Schlatter process is the outcome of many months of intensive effort to adapt the Swiss version of the electric-flash method to use in this country, and especially to develop equipment of the required mobility.

As now perfected the equipment is permanently housed in three specially designed steel box cars built by the Thrall Car Manufacturing Company. These cars serve the dual purpose of housing the welding set-up while it is in operation and providing mobility when it becomes necessary to shift the equipment from one location to another. These cars contain:

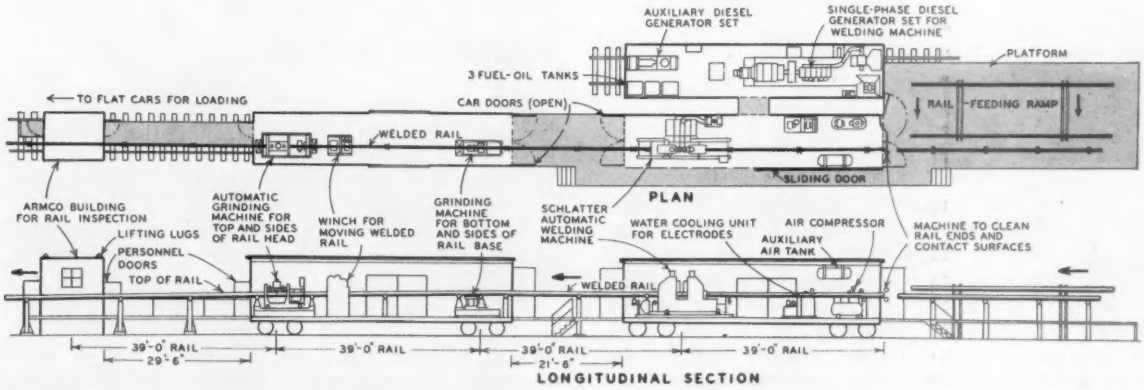
(1) The power plant used for generating the necessary electrical power for the welding process, and such additional power as is required to operate the various motors and lighting facilities required during operation.

(2) The welding unit, an air compressor and a water-cooling unit for cooling the welding electrodes.

(3) The grinding machines and a winch for moving the welded rail.

Arrangement at Albuquerque

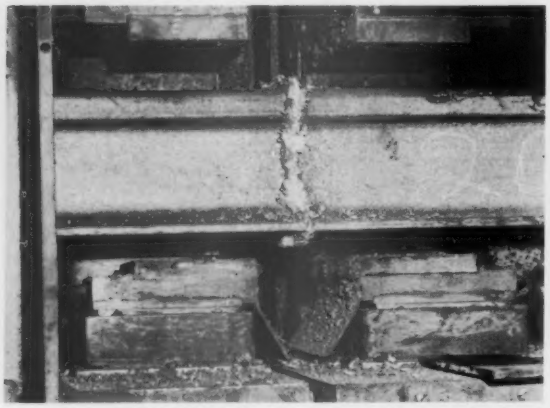
The welding equipment is arranged on two tracks at Albuquerque. The welding and grinding cars are on one track and the power car is spotted on a second track directly opposite the welding car. The production line begins at a rail-feeding ramp at the rear end of the welding car and extends through the welding and grind-



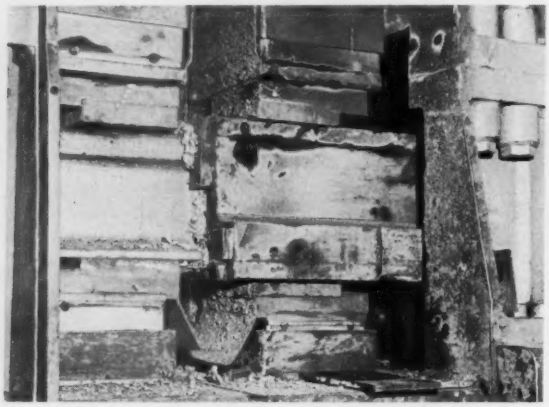
LAYOUT of production line at Albuquerque. As indicated by heavy arrows rail flows through the various fabricating and testing operations to its final discharge in 1,440-ft lengths for loading on strings of flat cars.

1 Rail with blanked ends arrives at the welding site on flat cars from the steel mills. Here, a Burro crane is unloading rail into stock piles. The crane also maintains a supply of rail on the rail-feeding ramp, transferring it from stock piles or cars. An endless drag chain on the ramp keeps rail concentrated at the lower end.

2 A rail has been placed in position on rollers ready for movement into the welding machine. Before entering the machine, its front end and the back end of the preceding rail will be cleaned with a sanding machine in the doorway of welding car to remove mill scale and dirt from end faces and electrode-contact points.



5 When the welding operation has been completed the operator releases platen clamps and removes the electrodes. Here is how a weld looks at this point in the procedure. Note the metal which was raised during upsetting. This ragged metal on the rail head and rail base is removed in the next step.



6 Retractable shear, clamped in one of the platens, removes the upset metal. Shear is controlled by the welding-machine operator and removes all but about 1/32 in. of the upset metal. When shearing is complete platen is released and shear is retracted. The joint then moves to the first of two grinder stations.

ing cars to a portable Armco steel building which houses equipment for testing the welds.

Portable platforms at car-floor height, with access stairs to the ground level, are provided between the cars, between the grinder car and the inspection building, and completely around the rail-feeding ramp. These platforms provide easy access to any point on the welding line.

The preparation, welding, finishing and testing of the joints is carried out at six stations (see picture sequence) located along the length of the welding line. These stations are equally spaced so that each operation may be carried on simultaneously with all the others, thus insuring assembly line production.

The usual practice on the Santa Fe is to weld the rails into lengths about 1,440 ft (37 rails) long. As the lengths come from the production line they are loaded directly on a string of 31 flat cars. On each car the rails are supported on a single specially designed assembly of 12 roller-bearing rollers mounted on a common shaft, thus accommodating 12 strings of welded rail. The draft gears of each car are blocked to prevent slack action in the train. Two trains have been provided so that one may be loaded while the other is transporting the rail to the unloading site.

Production and Personnel

The welding line is operated two shifts per day with the expectation that full production, when reached, will approximate 180 welds per day. Eleven men are required for each shift, including the foreman and all personnel necessary to handle the rail. The Matisa Corporation furnishes two of these men for operation of the welding machine and power car. The remainder are company employees.

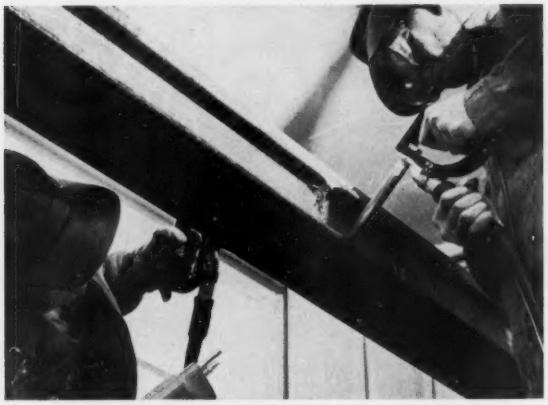
Only full-length No. 1 and No. 2 rails are being welded on the Santa Fe. Other rails from the same heats are shipped to the railway's frog and switch shop at Newton, Kan. All rail sent to the welding line is blanked at both ends except that a limited number are drilled at one end only for use as end rails of the strings.

3 At welding machine the forward rail is moved ahead until its back end is not more than 6 in. either way from the center of the welder. The following rail is then fed into place with its front end in contact with the back end of the forward rail. Here, the welding operator is alining the rails prior to clamping them in the platens.

4 There are four steps in the welding process—preheating of rail ends, flashing, upsetting and current interruption. The first step may be either automatic or semi-automatic. The final three steps are fully automatic. When welding is complete, a signal light is illuminated on the control panel.

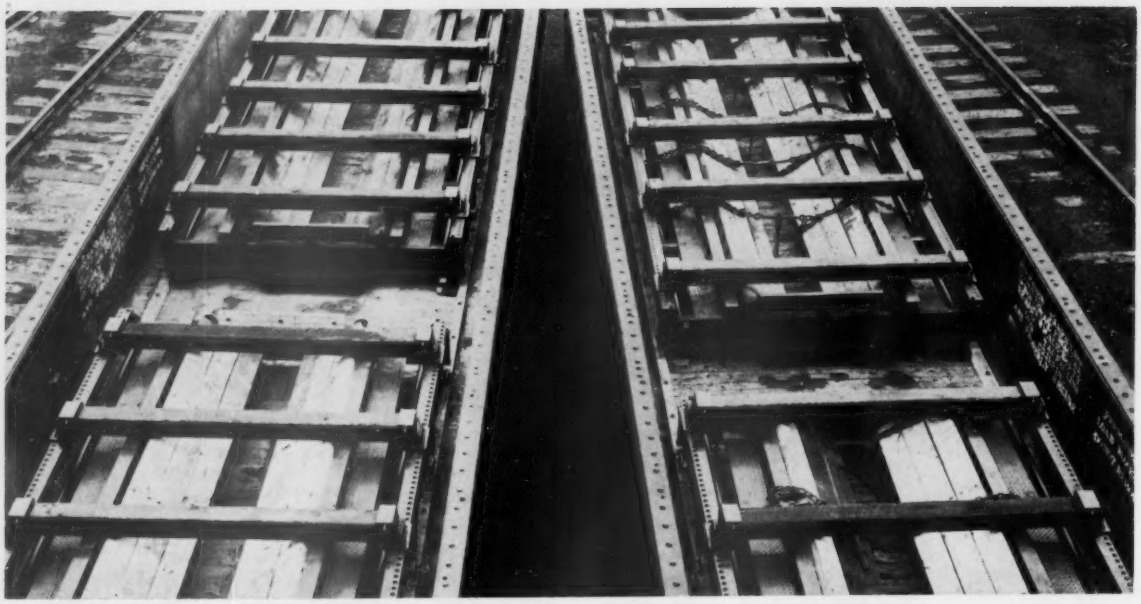
7 Base-grinding machine is manually controlled. Here a horizontal grinding wheel is removing excess metal from bottom of rail base. In next step vertical grinding wheels, mounted just ahead (in housing at left of weld), will remove excess metal from base edges. Rail clamp in background moves rail from station to station.

8 Head-grinding machine is semi-automatic. The operator positions the grinder wheel to the proper depth of cut and then switches machine to automatic. Machine then takes over and rotates about the sides and top of rail head while oscillating longitudinally. This motion is guided by two follower rolls.

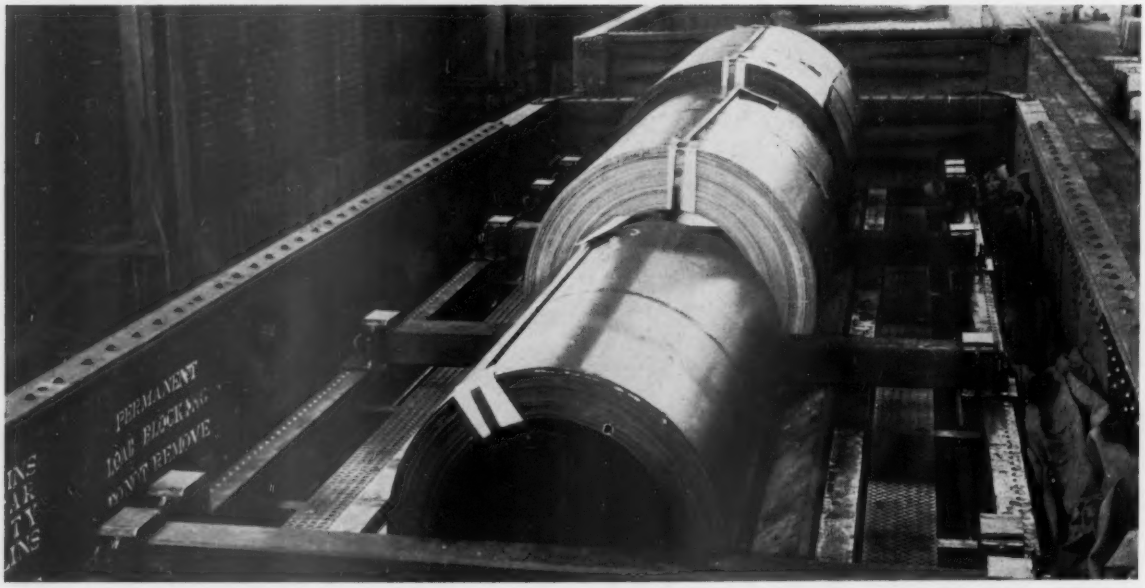


9 Magnaflux testing of the weld determines its soundness. Men are applying electrical contact prods to rail. Man at left will then spray iron dust on joint with blower. Should a defective weld be found it is immediately cut out with a portable rail saw and the rails are drawn back into the welding machine and re-welded.

10 The rail testing station is housed in a portable Armco steel building (right) at the end of the welding line. From this point the rail is drawn onto cars for transportation to the rail-laying site. At left in background is the power car. All necessary electrical power is generated in power car.



Using skids in gondolas—



New Way to Ship Steel Coils . . .

- Eliminates wrapping each coil individually
- Eliminates the need for blocking and dunnage
- Reduces loading and unloading time and expense
- Permits handling larger shipments, and
- Keeps damage to a minimum

Coils of steel can now be loaded in gondola cars and protected from the elements just as simply as when shipped by truck, thanks to some special skids developed on the Nickel Plate.

Two floating skids are installed in each car. These skids permit the coil to be loaded directly into the car, and they eliminate the need for any additional bracing. The skids also provide a quick and simple arrangement for installing or removing a protective tarpaulin.

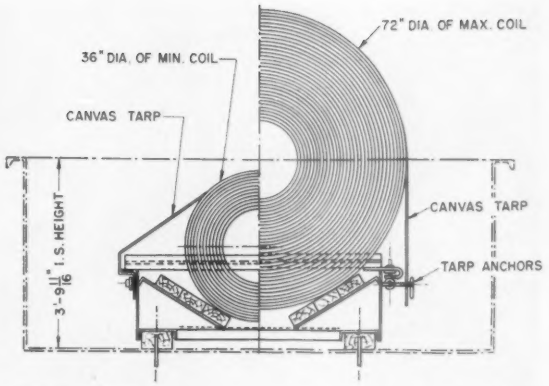
The skids are made "floating" for a couple of feet by the friction of the skid on the car floor. Further movement brings them in contact with buffer springs fastened to the floor at each end of the car to cushion against heavier impacts.

Cross members of the skids separate the coils and prevent damage in the event of impact. The crossbeams are 9½ in. wide by 4 in. high and are oak-faced. They are secured in position by pins in the end guides which drop in holes spaced at 2¼-in. intervals along the two sides of the skids. The separators also permit hooks and chains from overhead cranes to handle the coils in loading and unloading.

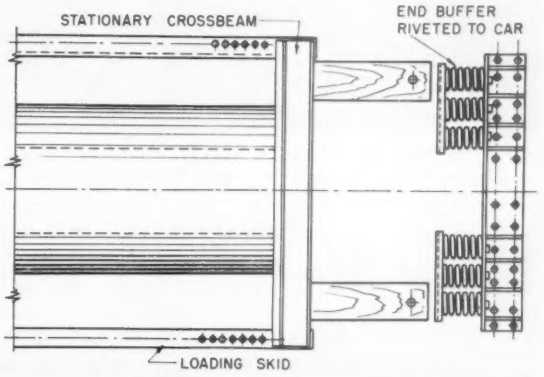
The tarpaulin that covers the coils is held in place over them by a series of simple anchors that fit through brass grommets along the bottom edge. The "tarp" is made of No. 8 brown canvas duck, flame-, water- and mildew-proofed.

The gondolas converted to coil cars have a rated capacity of 70 tons and a length of 52½ ft. Each car can handle six 6-ft coils, or more shorter ones. To date 15 cars have been equipped and 13 more are scheduled to get the skids.

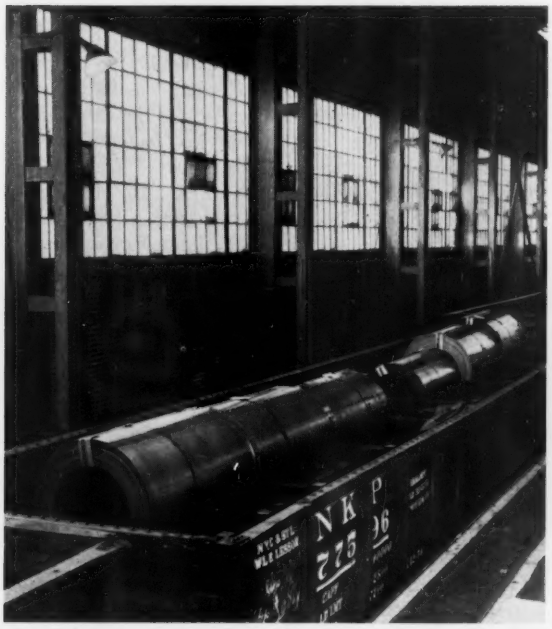
The equipment was designed by Robert Schey, general superintendent of the road's car department, as based on suggestions from traffic and operating personnel, and the Nickel Plate has applied for a patent on the design.



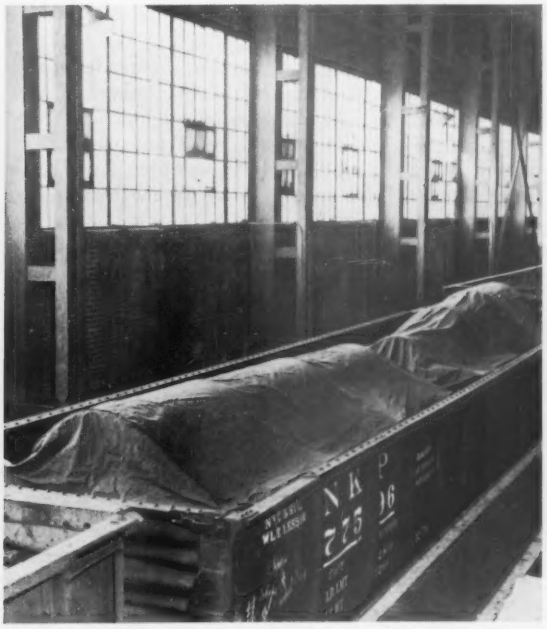
THE SLOPING coil supports (oak bolted on top of 3/8-in. steel plate) accommodate coils from 36 to 72 in. in diameter.



THREE AAR standard 3 11/16-in. travel freight car truck springs at each corner of the car cushion against impact.



THE SIX COILS are end-blocked by adjustable crossbeams to prevent sliding on the skids.



PROTECTION against rain or dirt is afforded by a tarpaulin that can be installed or removed quickly.

AT RUTHERFORD YARD (Harrisburg) this 2,400-hp unit is pulling 70 loaded cars up a 1 per cent grade.

How Reading Uses "Train Masters"

Road learns a single 2,400-hp Fairbanks-Morse unit can often replace two 1600-hp units in passenger and heavy yard services—Maintenance costs cut through reduction in number of units needed

Until a year and a half ago, the Reading was faced with a difficult dispatching problem at its Rutherford yard near Harrisburg, Pa. Both eastbound and westbound classification is handled at this yard and over an extended period the road has been searching for a single locomotive powerful enough to handle the heavy drags involved on east-end makeup.

The difficulty was that the assignment was too heavy for a single 1,500 or 1,600-hp road-switcher and yet not heavy enough for two such units. Through the years the closest the company had come to a solution was to use its 2-10-2 Class K-1 steam locomotives, with an average tractive force of 92,570 lb at 25 per cent adhesion. Because these steam locomotives were being replaced with diesels, two 1,600-hp. diesel units coupled were used in many cases to replace one K-1 on this assignment—an overinvestment in motive power.

Since acquiring nine 2,400-hp Fairbanks-Morse "Train Master" locomotives late in 1953, the Reading has effectively eliminated this problem at Rutherford yard. Two of these all-purpose diesels, each with an average tractive force of 96,475 lb, at 25 per cent adhesion, are used on east-end makeup. Working three tricks (24 hours) a day, seven days a week, each "Train Master" maneuvers about the yard, picking up drags of 60 to 70 loaded cars each, then pushes the fully assembled trains up a one per cent grade into the dispatching yard. When taken out of service temporarily for monthly inspection, each "Train Master" must be relieved by two 1,600-hp diesel units. The two units never leave Rutherford's east end, except for monthly inspection and for an occasional humping assignment in the same yard.

Assignments Varied

This is typical of the experience the Reading has had with "Train Masters" since becoming one of the first Class I roads in the country to purchase such power. A survey of Reading practice shows that "Train Masters" are being used at three key points to replace 1,500 or 1,600-hp units in a ratio of 1 to 2. Based on 422,903 unit miles of service between October 5, 1953, and November 30, 1954, the survey shows a wide variety of assignments handled by the 2,400-hp units, including passenger, freight, yard and mine drag duties. Since their introduction railroad men have been waiting to see how effectively a locomotive of this capacity could

TWO UNITS are equipped for passenger service, each replacing two 1,600-hp units on trains between Bethlehem and Philadelphia.

be utilized in everyday operation. The Reading's experience should answer many of these questions.

In brief, the Reading lists the following as the four most important contributions made to date by the "Train Masters":

1. An initial capital saving was realized by purchasing nine 2,400-hp locomotives instead of 13 or 14 lesser capacity units.
2. Because there are fewer units to be serviced and maintained, maintenance costs have also been reduced.
3. The addition of these higher-powered, general purpose locomotives has resulted in more efficient utilization of the road's existing pool of diesel units.
4. By assignment to specific yard, passenger and mine-drag duties which formerly involved a considerable overinvestment in motive power, conventional 1,500- and 1,600-hp road-switchers have been replaced at a ratio of 1 to 2.

Working Around-the-Clock

Five of the nine 2,400-hp units have been working around the clock in heavy mine-drag service in the St. Clair, Pa., coal fields, doubling over busy weekends as head-end power on fast symbol and through freight trains. Another unit has replaced two 1,600-hp locomotives in passenger-train service between Philadelphia and Bethlehem, its dual cab controls and two-directional design considerably simplifying terminal operations. Still another, equipped with a two-way radio-telephone, alternates between passenger and heavy yard-drag service at Bethlehem, replacing two conventional units on both assignments. These five different jobs can be extended to seven by including occasional helper and humping duties.

The Reading is principally a terminal railroad, carrying high tonnages over relatively short routes. It receives tonnage from the New York Central near Williamsport, Pa.; from the Pennsylvania and Western Maryland through the Lurgan gateway, just west of Harrisburg; from the Pennsylvania and B&O at Philadelphia; and from the Lehigh Valley and Central of New Jersey at Bethlehem and Allentown, Pa. It has extensive marine installations and floating equipment at Port Richmond, Philadelphia, and at Port Reading, as well as at Wilmington, Del., and other points.

Dynamic Brakes on Freight Units

Since the end of World War II, the company has acquired 246 diesels of various classifications. Today it has a diesel-locomotive pool of 354 units, totaling 479,160 horsepower. The addition of the nine "Train Masters" constitutes the latest step in its dieselization, which has seen all but 40 steam locomotives replaced.

In purchasing the nine Fairbanks-Morse units, the Reading specified that two should be specially equipped for passenger duty and seven for general yard and freight duty. The two passenger locomotives are equipped with dual controls but do not have dynamic brakes; the seven yard and freight units are equipped with dynamic brakes but do not have steam generators or dual controls. Each unit is ballasted to weigh approximately 10,000 lb more than the normal 375,000 lb. This increase in weight affects average tractive force and brake capacity at the rail.

Each unit is geared for 65 mph. They are hood-type, two-directional locomotives, powered by a single Fairbanks-Morse, 12-cylinder, 2,400-hp, opposed-piston diesel engine, with six driving axles and six motors. With its entire 386,700 lb (passenger) and 385,900 lb (freight) weight on drivers, each "Train Master" is

ONE "TRAIN MASTER" has two-way radio equipment to facilitate switching at the Saucon Creek yard in Bethlehem, serving the Bethlehem Steel Company.

capable of starting tractive force of 96,675 lb (passenger) and 96,475 lb (freight) at 25 per cent adhesion.

Units equipped with 2,500 lb-per-hr steam generators are capable of heating a 14-car train in zero weather and carrying 2,400 gal of train heating water in addition to 1,800 gal of fuel. Those not equipped with steam generators devote all tank spaces to fuel oil, having capacities of 4,200 gal. In addition, each unit carries 385 gal of lubricating oil, 250 gal of engine cooling water, and 48 cu ft of sand. The dynamic brakes installed on seven of the units are each capable of dissipating 3,000 hp at the rail.

On paper the "Train Master" is the equal of one and a half 1,500 or 1,600-hp units, and the Reading's experience has substantiated this in day-in, day-out service. When the first demonstrators were delivered, the Reading used the 1½-to-1 ratio as a yardstick in assigning tonnages. For a specific run, they consulted the road's tonnage rating sheets and added 50 per cent to whatever tonnage was recommended for a 1,500 or 1,600-hp road-switcher. They then added or subtracted 5 per cent, depending upon the particular grades and other operating conditions to be encountered. The Reading reports that this procedure worked out from the first day.

Helping the Dispatcher

The chief advantage of this added power has been more efficient utilization of the road's existing diesel pool. As at Rutherford, dispatchers are frequently confronted with trains that are too heavy for one unit and too light for two. As an example, a train of 5,600 tons between Hagerstown, Md., and Rutherford is too much load for a single 1,500 or 1,600-hp road-switcher (which on this run can only haul 3,750 tons) and yet too light for two such units (which can handle up to 7,500 tons). Each "Train Master," on the other hand, can safely move 5,600 tons between these two points, thus enabling the dispatcher to assign the two lesser-capacity units elsewhere and at the same time avoid the waste of 600 or 800 horsepower.

An example of a "Train Master" which is regularly replacing two conventional 1,600-hp units is in passenger service between Philadelphia and Bethlehem, where rapid acceleration is being used to maintain extremely tight schedules, taking four trains back and forth every day, Saturdays and Sundays included. Extra power and high tractive force are needed on this run because it is similar to commuter service, with as many as ten stops in 56.6 miles. Locomotive No. 861 leaves Bethlehem at 5:41 a.m. on Train 356, arriving in Philadelphia at 7:31. At 4:30 p.m. it returns to Bethlehem on No. 373, turning around immediately to take No. 328 back to Philadelphia. At 11:30 p.m. it makes its final run for the day, laying over in Bethlehem until the morning. Similar schedules are maintained on weekends. Each train has from five to ten cars.

When monthly inspection comes around, No. 861 is relieved by its twin, No. 860, which is also equipped for passenger service. No. 860 in turn is relieved by two 1,600-hp road-switchers at the company's Saucon Creek yard in Bethlehem, where it normally works 24 hours per day, seven days a week, hauling heavy iron ore and coal drags up a two per cent grade into the nearby Bethlehem Steel Company plant. For this service No. 860 is equipped with a two-way radio-telephone to facilitate operations and to provide convenient communications between the engineman and the yardmaster at the yard.

Mine-Drag Service

Five "Train Masters" are assigned to heavy mine-drag duty on the Shamokin division. Here, among the open pit and deep mines that surround Gordon, Tamaqua, and St. Clair, they move prepared and unprepared coal from one colliery operation to another.

Two units are stationed at the Oakland and Locust Gap collieries at Gordon, Pa., where they move raw coal via a 2.6 per cent grade to the breakers at St. Nicholas and Locust Summit. The remaining three are used at St. Clair, moving coal to and from the scaling yard at St. Clair and the breaker at St. Nicholas. Each unit works 16 to 24 hours a day and when relieved is replaced at a ratio of 2 to 1 conventional 1,500 or 1,600-hp units.

This type of colliery service is among the toughest to be found in modern railroading. On weekends, for example, three "Train Masters," coupled to provide a total of 7,200 hp, are often used to move prepared coal from the St. Nicholas breakers to St. Clair, moving an average load of 4,050 tons up a 2.9 per cent grade to Frackville, at the summit, and then down a 3.3 per cent grade to the St. Clair scaling and classification yard. In the opposite direction, the same three units move unprepared coal up the 3.3 per cent grade from St. Clair to Frackville and then down the other side to St. Nicholas. On this run each unit can haul a load of 850 tons.

When descending the 3.3 per cent grade, which is three miles long, retainer valves are used on all cars and automatic brakes are used in addition to the 3,000-hp dynamic brakes on each diesel unit. This Frackville grade is by far the toughest on the Reading system.

Occasionally one of the "Train Masters" on the Shamokin division is used to haul as many as 150 loaded cars of prepared coal, representing approximately 12,000 tons, over an 80-mile river grade between St. Clair and Bridgeport, Pa. Here, the train is picked up by the

Philadelphia division for movement eastward to the point of delivery, or, in the case of tidewater coal, to the ships that take it overseas. On the return trip to St. Clair each "Train Master" usually moves 125 to 135 empty hopper cars.

Because colliery operations in its area are often limited to a five-day week, the Reading frequently has an opportunity to use these five "Train Masters" over weekends as head-end power on fast symbol and through freight trains as another example of their universality.

Over the weekend of November 19 and 22, 1954, for example, Nos. 802 and 804 were coupled together and used as head-end power on eight freight trains between Rutherford, Pa., Hagerstown, Md., and Cumbo, Md., the latter an important interchange with the Pennsylvania. The total adjusted tonnage moved during this three-day period was 58,669 tons, representing 498 loaded and 517 empty cars.

The weekend began on Friday evening, shortly after the two units had completed their normal mine-drag duties at Gordon and St. Clair. They proceeded immediately to Rutherford, where they picked up 148 empty cars, totaling 4,468 adjusted tons, and left at 10:48 p.m. for Cumbo. Arriving at 4:30 a.m. on the 20th, they had to wait only two hours and ten minutes before leaving again with 115 loaded cars, representing 10,019 adjusted tons, for Rutherford. Departure time was 6:45 a.m. and arrival was 11:12 a.m.

That same evening they left Rutherford at 7:13 with 32 loaded and 66 empty cars, totaling 4,420 adjusted tons, for Hagerstown, Md., where they arrived at 11:05 p.m. Three hours later, at 2:14 on the morning of the 21st, they pulled out of Hagerstown with 119 loaded cars, representing 10,429 adjusted tons. At 7:52 a.m. they arrived back at Rutherford, where they laid over until 2:13 that afternoon. At that time they left again for Cumbo with one loaded and 152 empty cars, representing 4,555 adjusted tons, arriving at 7:30 p.m. Just an hour and ten minutes later they were ready to leave again, this time for Rutherford, with 115 loaded cars, totaling 10,133 adjusted tons. Arriving at their destination at 4:01 on the morning of the 22nd, they had a seven-hour lay-over before picking up one loaded and 151 empty cars, representing 4,524 adjusted tons, and leaving at 10:51 a.m. for Cumbo. They arrived at 5:15 p.m. only to turn around an hour and a half later for a return trip to Rutherford, carrying 115 loaded cars, totaling 10,121 adjusted tons. Immediately after their arrival at 11:02 p.m., they proceeded back to Gordon and St. Clair and the following morning resumed their heavy colliery assignments.

This may be taken as a typical weekend's work for the "Train Masters" and as an illustration of how intensively the Reading is using them. To heighten this utilization, two of the seven "Train Masters" not equipped with steam generators have been equipped with steam train lines, which facilitates their use as a second unit in a two-unit passenger locomotive, one equipped with a steam generator.

On the Reading the nine "Train Masters" have established impressive availability records. In their first year of operation, computed on a "minutes-of-the-day" rather than on an assignment basis, the TMs averaged 92 per cent availability in passenger service and 92.5 per cent in freight service.

On November 30, 1954, the nine units had completed a total of 422,903 unit miles of service, consuming 970,818 gallons of fuel oil at a rate of 2.0 gal per unit mile in passenger service and 2.4 per unit mile in freight service. Lubricating oil consumption per unit mile averaged 0.014 gal in passenger service and 0.018 gal in freight service.

IN COLLIERY SERVICE between St. Clair and St. Nicholas, Pa., a "Train Master" hauls up to 850 tons up a 3.3% grade, using dynamic braking on a 2.9% grade descending from the summit.

Photos by J. J. Sonecal

"Survival is the biggest job before railway management. There is nothing vague about that."

N. R. Crump Speaking

New Canadian Pacific president looks ahead and speaks his mind

Railroads are more needed today than ever before—especially in Canada, which is expanding geographically as well as industrially. Their basic strength is low-cost movement of large volumes in all terrains and in all weather. Their main job now is to obtain the freedom with which to exploit those advantages. Meanwhile they must continue to find new ways of moving traffic and maintaining plant so as to cut their costs still further.

That is, perhaps, a capsule paraphrase of the basic management policy of Norris Roy Crump, who was elected president of Canadian Pacific on May 4 (*Railway Age*, May 9). His company not only operates 17,000 route-miles of railway—making it the second longest railway system in the Americas—but also a chain of hotels in resorts across Canada; a fleet of passenger and freight vessels in foreign service on the Atlantic and along the west coast of Canada and Alaska; a network of air routes reaching to Peru, Hong Kong and Australia, nationwide express and communication operations; and a fast-growing fleet of road-haul trucks. It has long advertised itself as the "world's greatest travel system."

In an interview with *Railway Age* the new CPR president was reluctant to suggest policy for any property but his own. Although 145 miles of the main line of the CPR run through Maine and an additional 4,800-odd miles of railway in the U.S. are owned by companies controlled by the Canadian company, he does not feel competent to "prescribe for another country where precedents, laws and practices necessarily differ."

Mr. Crump will venture, however, one word of caution and one piece of advice. He is impelled to the first by his position as head of the only major, privately-owned railway left in the world outside the U.S., and one which must compete with a government-owned railway operating 60% of Canada's mileage. An isolated status like this, he says, "is becoming tougher every day to maintain."

"Grow, Improve and Prosper"

He warns his counterparts south of the border to "keep on worrying about government ownership, even though it is an ancient fear, because it is coming as sure as death and taxes if the railways fail to grow, improve and prosper." He recalls that the competing Canadian National fell into government ownership as a result neither of ideology nor popular demand; "its vesting was an act of expediency to preserve essential railway services which, as then constituted corporately, could not survive."

With those railroaders who think that a preoccupation

with political and regulatory matters is too vague and academic for practical executives Mr. Crump disagrees violently. "Survival," he repeats, "is the biggest job before railway management—and there is nothing vague about that."

His piece of advice is that the U.S. roads "should fight hard" to get the Cabinet Committee report on transportation "enacted into law and reality," just as the Canadian roads are going to fight hard to persuade Parliament to enact those recommendations of the recent Royal Commission on agreed charges which would grant greater freedom in pricing.

No Don Quixote

On the subject of fighting, Mr. Crump emphasizes that he does not intend to tilt at windmills or "chase will-o-the-wisps." "Fight because you want to win. Go after the possible—not the desirable."

Thus, while the new CPR president agrees that, in strict justice, the railways have a right to ask release from their obligations as common carriers—because society has quit protecting them to any degree from competition—nevertheless, as a practical matter, he believes the railways will always have to act as enterprises endowed with the public interest. At least in Canada, the task of carrying low-valued commodities at low rates and of furnishing necessary services will continue to be borne by the railways.

"Within these practicable limitations, the most important task before railway management is to behave as competitive businesses—and to obtain political recognition of the necessity to do so. Either get the necessary freedom to compete on equal terms, or establish the need for equal regulation of the other forms of transportation."

While he "would, perhaps, personally favor more freedom for railways, over more regulation for their rivals," Mr. Crump, nevertheless, made plain his view that it "*is* feasible to impose equal regulation all around: if you can get 165 million Americans and 16 million Canadians to obey complicated laws, you can get a thousand or so transportation agencies to comply with regulations."

"Don't Fence Me In"

Beyond pointing general directions, the new CPR president has the born Westerner's dislike of "immovable principles fixed for all time." He sees it as his job as steward of a great property to be alert to, and anticipate, change. He is not fond of laying down policy, "because the theme changes too often." He agrees with C. D. Howe, former minister of transport, who said: "There is nothing I have less respect for than my opinion of yesterday."

Here are some of the CPR chief's opinions, as of today:

- *On Railroads' Most Potent Weapon—*

"To regain traffic from competitors, it is not a question of service *or* rates, but of both. They are Siamese twins which cannot be separated. In many areas, however, low cost is the railways' most strategic advantage."

- *On Passenger Service—*

"Railways can find profit in providing comfortable service which is not so fast as to constitute a strain. Spaciousness is their strong point. CPR's faith in the future of passenger service is proven by the purchase of more than 500 new cars, 1947 through 1954—including 173 streamlined cars and 11 RDC's. In addition to attracting traffic, new equipment is less expensive than older units."

- *On Commuter Service—*

"It is strictly an obligation—not a profitable business transaction. The Canadian roads fought for, and obtained, a 50 per cent increase in commuter fares in the Montreal area—which is the only sizable operation for CPR. We are going to continue to fight for the other 50% we asked for. Before the increase, commuter fares were substandard—far below the level of those in the U.S. They are still not compensatory. Nevertheless the CPR spent about $100,000 apiece for 40 new suburban coaches."

- *On Future Problems—*

"Both our countries are full of developments which hold tremendous implications for the railways—both for good and for bad. They must be watched closely. In Canada, for example, the future of the railways could be affected seriously by a new Royal Commission inquiry into coastal shipping and by a proposed government inquiry into the broad, basic economy of Canada."

- *On the St. Lawrence Seaway—*

"This project will affect railways strongly, one way or the other. We did not oppose its building, on the ground that 'whatever is good for Canada is good for the CPR.' Canada's need to export bulk commodities is very much greater than that of the U.S. Use of the waterway by low cost foreign-flag vessels in the export-import trade is going to be a serious challenge to all railways, because restrictions on foreigners' right to carry international commerce will not apply."

- *On Rate-Making—*

"Truck competition has imposed a ceiling on the rates railways can charge for high-valued commodities. Railways cannot expect to recover as large a proportion of their constant and overhead expenses from high valued commodities as they have in the past. This will be true whether they reduce their rates on truck-competitive traffic, or whether they leave the trucker under the protection of the railway price umbrella and let him have the more lucrative traffic.

"It seems reasonable to assume that, in the long run, the railways will be better off by retaining and regaining all the traffic upon which they can make a profit."

- *On Motive Power—*

"I can see nothing in sight at the moment to replace the diesel-electric locomotive for economy and performance. It must be emphasized, however, that the electric drive feature is expensive and complex; a direct-connected, or fluid coupling, drive would be most advantageous—though, thus far, it has proved unfeasible for heavy traction. We are watching European developments in this field closely. Incidentally, the CPR will gain experience with direct-connected diesel propulsion when it takes delivery shortly of a motor vessel with diesel

"Fight because you want to win. Go after the possible—not the desirable."

drive directly geared to the shaft through variable speed transmission.

"Atomic power for railways—and I'm just speculating on the dim future—would likely take the form of fixed electric generating stations, with line transmission to electric locomotives."

Rate of Return

For a long period the CPR has sought to establish recognition of the right of the company to obtain a rate level which will afford a return of 6½% on its property investment. (The U.S. roads have asked for a rate of 6%.) So far it has been unsuccessful.

In 1954 the CPR's rate of return reached a low of 2.15%. (Rate of return of U.S. roads was 3.28% in 1954.)

Mr. Crump believes the company will continue to press for recognition of the principle, despite the present need for competitive rate reductions. One reason for continued insistence on a fair rate of return is the railway's determination to end the rule of old-fashioned statutory rate-making, by which rates on grain—constituting about one-third of CPR's freight traffic in terms of ton-miles—continue at the level of 1899, or about one-third of the level applicable in the U.S. Another reason is the CPR's belief that freight and passenger rates should be related solely to the revenues from railway operations. Thus far, those opposing rate increases for the Canadian railways have contended that earnings from CPR subsidiaries in mining, oil lease, and other fields should be taken into account in establishing the company's need for revenues.

Finally, the CPR believes that recognition of the principle of adequate rate of return would permit the railways in Canada to establish a fair and equitable ceiling to cover the generality of traffic which they have a common carrier obligation to move—often in a "standby" capacity. Under this ceiling, the railways would operate competitively to establish rate adjustments for particular services and customers which would reflect the lower costs produced by volume and consistency of traffic offerings. In short, says Mr. Crump, "We want a roof on a general hunting ground."

More Building Ahead

The new president of Canada's private "bulwark of the Canadian economy" sees a need for *extensive*, as well as *intensive*, growth of Canada's railways in the years ahead. Freight traffic on the CPR during the postwar period has been higher than even that of the war years. The physical production of Canada is increasing at a rate of about 4% a year; i.e., it doubles in less than 18 years. In contrast to most U.S. railways, which stopped growing in mileage and started shrinking about 1920, the CPR has greatly increased its line mileage during the past three decades. Route miles are about one-third greater now than in 1922.

The CPR's rail system is still growing. Last year some 70 miles of new first main track were under construction, to serve new mines and industrial areas. In contrast to the U.S. roads—whose serviceable freight car fleet is about the same size as it was in 1947 (though somewhat larger in aggregate capacity)—the CPR's car fleet, compared with 1947, is up 9% in numbers and 21% in carrying capacity. During the last eight years the CPR has placed in service 29,000 new freight cars.

To meet the demands of Canada's growth, as well as to modernize its plant, the CPR has spent $600 million of capital funds since 1947. Of this expenditure about half came from depreciation and reserve monies, $200 million from new borrowings, and the balance from retained earnings.

To accomplish the task, the road had to increase the amount of its debt to the highest level since 1941. To keep up the pace, it will have to enjoy much more satisfactory earnings on its rail operations in the future.

Essentiality Assured

Of one thing Mr. Crump is convinced. Railroads are as essential as they ever were. The combination of ore and steel producers which built the Quebec North Shore & Labrador to move iron ore out of the new Knob Lake field could, he said, have built a private highway instead. Why didn't they?

The people who own and operate the new ore line are not die-hard railroaders; they are tough-minded business men with no predispositon as to choice of carrier. "If cold economic fact is the valid reason for building a new railway, surely it is equally valid as a reason for maintaining existing ones in a healthy condition."

Zeal for Education

Mr. Crump reserves a special fund of enthusiasm for education for railroaders. The business today, he claims, "is too complex to learn solely by doing." The diesel locomotive, he says, is a "good case in point."

He has "lived out" his prescription. He was born the son of a pioneering CPR railroader, who retired from the road as a division superintendent. His father, still hale and hearty, is glad to see his son getting on so well,

(Continued on page 44)

Personnel: A New Frontier?

Railroad officers today are showing increased interest in how to get maximum returns from the high-wage dollar

Railroads have fallen behind badly in the techniques of "human relations."

This observation, made recently by a railroad personnel officer, touches on a matter of growing concern to many railroad men. They recognize that today's high wages and salaries must be matched by performance; and they see the vital importance of high caliber, highly trained employees and supervisors. It is not surprising that an increasing number of railroad officers are showing appeciation of the value of personnel work beyond the scope of labor relations.

On some roads today—and there are encouraging signs that more will be added soon—the old and established line functions of hiring-firing-paying-promoting-and-assessing-discipline are being supplemented with training and development programs for supervisors, with new recruitment efforts, with better and standardized hiring practices—in short, with a whole new concept affecting employee morale, attitude to the public, sense of responsibility and observance of rules.

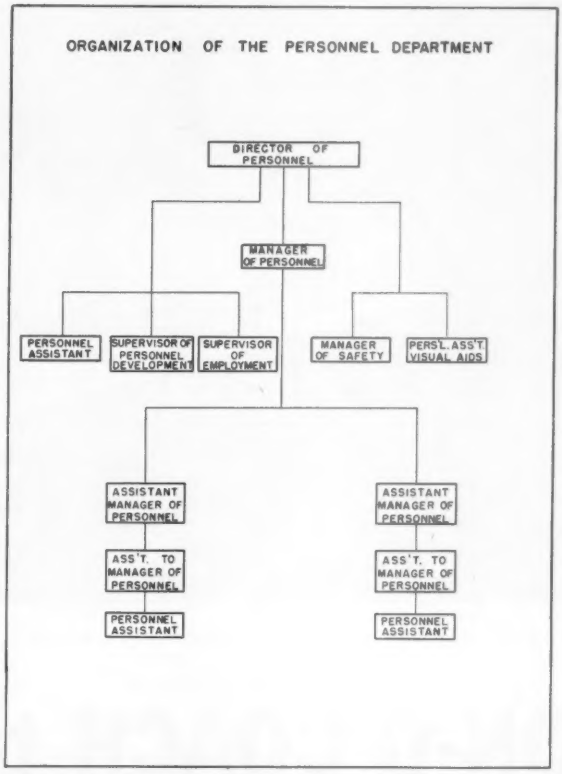
This is not to say that operating officers are giving up traditional responsibility for their employees. As one personnel officer has remarked, they must continue, in every respect, to be responsible for their own personnel. But the recognized need is for policy-level handling of company-wide matters. It includes such things as programs for the training and development of supervisors. The factors of morale, incentive and loyalty are all important parts of the picture.

Clarence Francis, board chairman of General Foods, once put it this way:

"You can buy a man's time, you can buy a man's physical presence at a given place; you can even buy a measured number of skilled muscular motions per hour or per day.

"But you cannot buy enthusiasm; you cannot buy the devotion of hearts, minds and souls. You have to earn these things. . .

"It is ironic that Americans—the most advanced people technically, mechanically, and industrially—should have waited until a comparatively recent period to inquire into the most promising single course of productivity; namely, the human will to work. It is hopeful, on the other hand, that the search is now under way."



THE ILLINOIS CENTRAL has developed this organizational pattern for its personnel department.

Several railroads already are helping look for answers. The Illinois Central, Rock Island, Canadian Pacific, Western Maryland and Chesapeake & Ohio are among those that have, for some time, carried on di-

(Continued on page 42)

"... By confining our personnel activities on the railroads to the comparatively narrow field of labor relations—important though it is—we are far behind outside industry in attempting to realize the potential inherent in the work force ...."

MON-O-COACH trailers meet your off-track housing of maintenance

HERE you have a new and exceptionally good solution to a present or future problem — *mobile* housing of maintenance-of-way forces.

Up to now, the general practice has been to use converted railroad cars for such housing. Occasionally converted house trailers have been used.

Now Mon-O-Coach makes available its all-aluminum trailer in *exclusive* monocoque construction. It is designed specifically for off-track housing and already proven preferable for this purpose in actual use. In addition to considerable cost savings, there are many important advantages to using all-aluminum off-track trailers as designed and built by Mon-O-Coach, Inc.

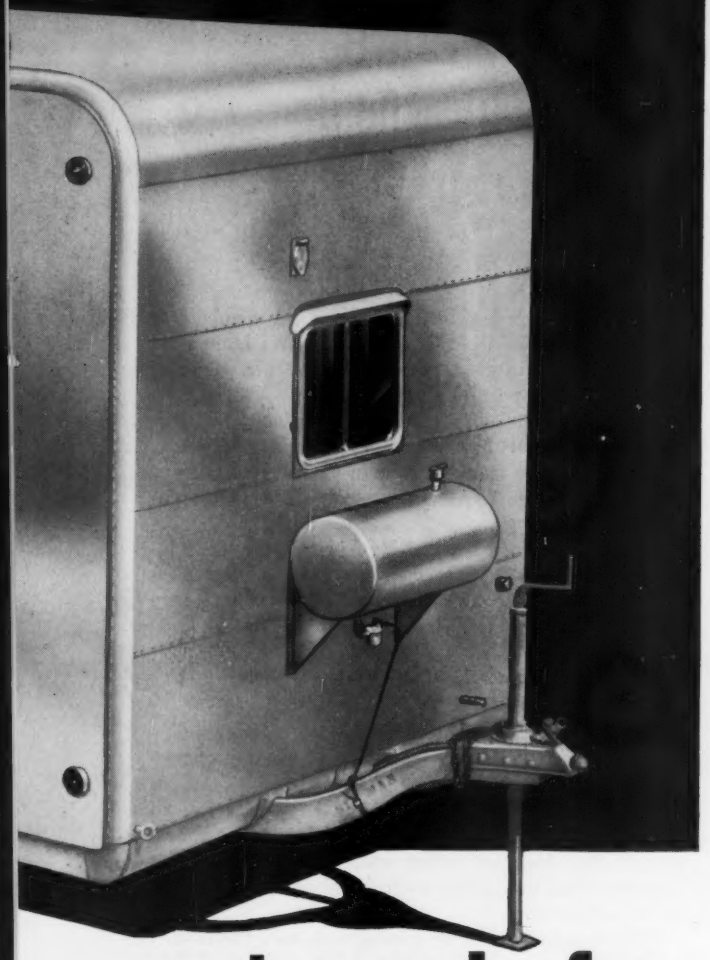
Maneuverability Gained. The type of trailer offered by Mon-O-Coach is perfect for maneuverability. It can be moved easily — by car, light truck or jeep. It conforms to highway travel requirements. It can be parked in relatively small areas. It may be located for short or long periods, as needs require.

Obviously, trailers require no track equipment or extra sidings. These costs are entirely eliminated. Nor do trailers require long, costly hauls from on-track housing to work sites, where sidings are not nearby.

The use of trailers for bridge-and-building forces, carpenters, welders, and the like are natural. For example, it has been found that a welding crew can be furnished with a trailer, a truck and all equipment required for far less than the cost of converting a car for only housing this crew.

Mon-O-Coach represented by:
J. B. Akers, Jr., Washington, D. C.
Harold L. Emerson, St. Louis, Missouri
Ralph A. Corley, Jr., New York, New York
Robert J. Wylie, St. Paul, Minnesota
Russell E. Long, Chicago, Illinois
Caesar Baldassari, San Francisco, California

Mon-O-



exact needs for forces

One leading railroad has also found that most all maintenance-of-way forces, including steel gangs, can be housed better, more economically and more efficiently in trailers.

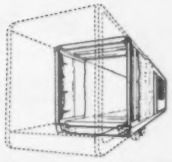
How Exact Needs are Satisfied. Mon-O-Coach off-track trailers are currently built in six models—6-man, 4-man, 2-man, foreman and 2-man, dining and kitchen trailers. You can combine these — and possibly others — into whatever complements serve your specific purposes. Interior arrangements may be as presently designed, or altered to suit your specifications — without high conversion costs.

Mon-O-Coach experience in building hundreds of off-track units, and Mon-O-Coach's specialized engineering assistance may be just what you've been waiting for. Investigate now.

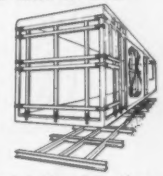
Monocoque construction for 'lifetime' durability in all-aluminum Mon-O-Coach trailers

PERHAPS the biggest reason *Mon-O-Coach* off-track mobile housing units have captured the interest of railroads is their exclusive, exceptionally durable, *all-aluminum* monocoque type of construction.

Monocoque construction produces a unit that is completely integrated — with all structural members, including the side and top panels, bearing the load, pull and shock stresses. This differs substantially from the conventional "box-on-chassis" type of construction — with weakness bound to develop where bolts and nails are used to hold the body to the chassis.



Monocoque construction produces an integrated, one-unit body — stronger, safer, far more durable.



Conventional trailer construction is essentially a box-on-chassis.

Withstands Rugged Service

In the Mon-O-Coach, stresses, jolts and jars are dispersed throughout the entire body and side panels. No one point takes the brunt of these stresses. There's no "shock line" that eventually weakens to the point of trailer uselessness.

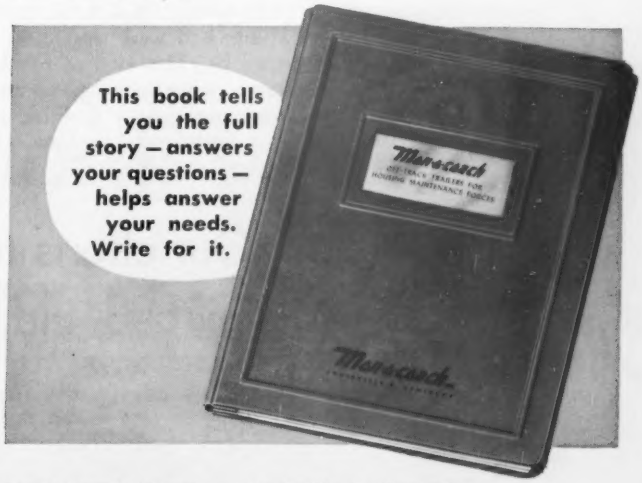
Severe tests of monocoque construction prove its exceptional durability. It is estimated that a monocoque-design trailer will outlast a conventional trailer by at least four times.

Exclusively Mon-O-Coach

Only Mon-O-Coach offers this monocoque-built trailer. Design extrusions are made from dies developed and owned by Mon-O-Coach, Inc. And only Mon-O-Coach has the experience and facilities to build this proved, more durable trailer.

Being all aluminum, the exterior requires very little maintenance. The Mon-O-Coach also resists rust and corrosion. The aluminum interior is also easy to keep clean.

The complete facts about Mon-O-Coach off-track trailers are available to you without obligation. Simply write, on your letterhead, for 48-page book, "Off-Track Trailers for Housing Maintenance Forces."



coach, INC.

2515 South Fourth Street • Louisville 8, Kentucky
Charles H. Becker, President • Phone Calhoun 5485

"... Maximum benefits to the industry can be obtained by bringing in new ideas in this field at a pace where they will receive the greatest possible degree of acceptance ...."

versified personnel programs. They are going beyond the negotiation of wages and attendant welfare programs and are endeavoring to get a maximum return from the work force on which they spend more than half of every revenue dollar.

The IC, for example, is currently completing a comprehensive survey of supervisor attitudes, affecting some 3,000 of its employees from the president down to the assistant track foremen. The CPR has a valuable system of periodic reports from supervisors on the progress of new employees. The C&O reports some success with the "cutoff" problem—people cut off in one location while others with the same skills are hired elsewhere on the system. And the Rock Island has an employee selection program which undertakes to uncover the "will do" character traits of each job applicant. These are merely samples, but they show the range and type of work already being done.

Can personnel work of this kind really offer something of value to the railroad industry? If so, where are the more rewarding areas in which to begin work? *Railway Age* discussed these questions with a five-man panel of railroad personnel men, all active in human relations work. The men expressed their own opinions in all cases, but their background lends substance to their views. The group included E. H. Hallmann, director of personnel of the IC; Frank J. Householder, Jr., chief of personnel services, C&O; Yerby R. Holman, director of personnel, Western Maryland; J. D. Loftis, assistant superintendent of motive power, Rock Island, and S. M. Gossage, assistant manager, Personnel Department, Canadian Pacific.

These men agree, first of all, that personnel planning and direction on any railroad is properly a staff function, an advisory or "consulting" role. There are conditions in the industry, it is true, which tend to limit staff activity. Manpower is seldom concentrated. Vertical communication is often difficult. Not infrequently, there exists a distrust of any staff work, regardless of how well-intentioned it may be. This kind of reaction arises in part, as Mr. Holman pointed out, because staff-line relationships are "counter to industry tradition and suggestive of a man out of departmental uniform moving from one camp to another."

In spite of such drawbacks, however, all members of the panel cite specific areas where they feel human relations activity can produce good results. Mr. Hallman mentioned specifically these four things:

"1. We must strive to eliminate inefficiency and discourtesy on the part of our employees serving the public.

"2. We must be more selective in hiring.

"3. We must do a more thorough job of indoctrinating new employees.

"4. We must do a better job of identifying those individuals in our organization who possess the qualifications to make good supervisors and officers and help them achieve what their abilities promise."

Action from the Top

Obviously, undertakings of this scope call for policy decisions by management, decisions which are system-wide in effect. In clearing the way for this kind of action, the personnel officer in his advisory capacity can function as a sort of "architect of company philosophy." He does not effect such policy himself, for experience has shown that such decisions must be made by the president.

"Where action has been conspicuous and effective, it has begun at the top," commented Mr. Holman. "Only the president can initiate successful manpower management. His success depends on proper definition of line and staff personnel responsibility. Line officers must retain their authority on personnel matters; and they must be held responsible for administering any personnel policies and programs established."

An area that Mr. Holman considers especially worthy of attention from a staff standpoint is that of "organization planning and control." He finds little logic or rationality in the structure of railroad bureaucracy, and thinks the traditional medicine of force reduction "is an obsolete palliative for organizational streamlining."

"Much productive staff work can be done in analyzing and redesigning the organization," Mr. Holman said. "Sound organization puts the company in the proper posture for performance. Organization control is essential to achieve useful manpower accounting."

Mr. Holman prefers the word "staffing" to hiring. As

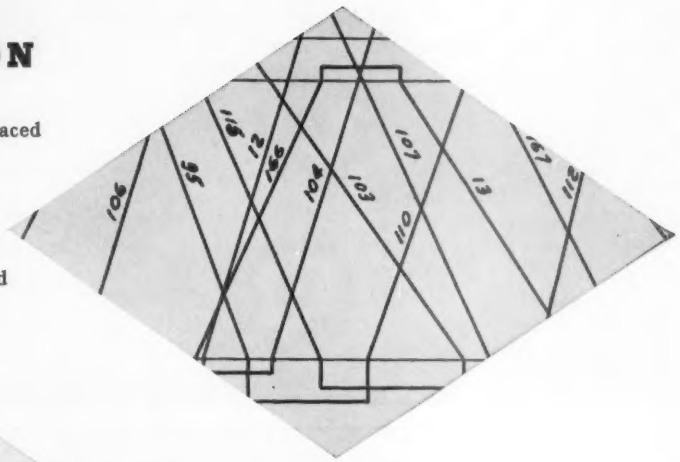
"... Our efforts to improve the human factor in the railroad industry have been very feeble indeed ...."

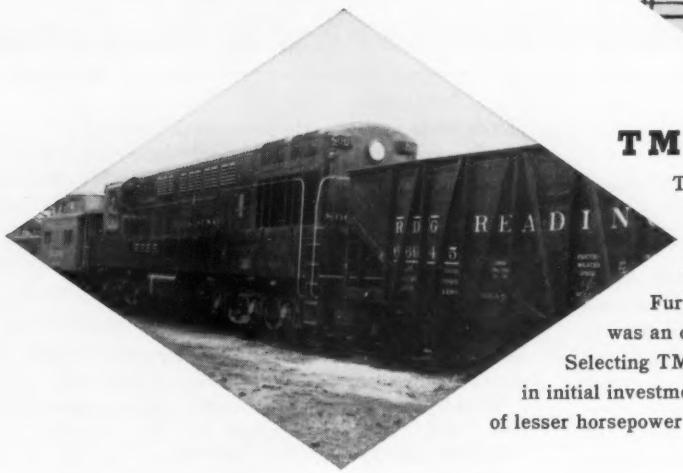
ON THE

Reading Lines

TM UTILIZATION

As planned on paper, 2400 hp. Train Masters at three key points on three divisions have replaced 1500 and 1600 hp. units at a ratio of 1 to 2, affecting better utilization of *all* motive power. They handle nine types of service in all, on a three trick basis, including yard drag service, symbol freight, humping, passenger and mine drag service.





TM POWER

Train Master provides the right combination of power and traction motor capacity to handle jobs beyond the ability of a standard road switcher. Furthermore, two standard road-switchers was an over-investment in motive power. Selecting TMs effected a considerable saving in initial investment over buying units of lesser horsepower and gave better utilization.

. . . again proving that
Your Best Motive Power Investment is in **TRAIN MASTER**

Fairbanks, Morse & Co.
600 S. Michigan Ave.
Chicago 5, Ill.

FAIRBANKS-MORSE
a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • MAGNETOS

"... The personnel function is company-wide, and requires uniformity of policy in its application ...."

he uses it, it means not only hiring but placement, promotions, transfers, job training and managerial development. He considers it the role of the personnel department to develop standards or measurement tools in these areas—leaving it up to line officers from that point on.

The Canadian Pacific's Mr. Gossage said he believes the two "fundamental factors" of line officer responsibility and physical dispersion of the work force help confine a railroad's personnel department "to thinking up ideas and selling them to line officers to put into effect."

Actually, according to Mr. Gossage, this is not far from some of the current thinking in the manufacturing industry, arising from earlier overcentralization of personnel work.

The CPR officer went on to mention a number of areas where he believes attention by a personnel department is warranted.

"There is a great deal of work to be done in the field of testing and selection of railroad employees," he said. He thinks that in places where employees are concentrated in large centers the function of employment can fairly easily be specialized—so long as the right of individual department heads to make the final selection of their own employees is not prejudiced. He feels that much can be done, also, to improve employee training and development; and there is room for a lot of research in how to job-train men to improve morale, sense of responsibility and attitude to the public.

The relationship of the supervisor to the employees under him may very well be the key to this kind of difficult training, Mr. Gossage added. This indicates the first step is to train and develop supervisors; and on his own road an important part of current personnel work is being directed toward that very kind of supervisory and management development.

Mr. Householder of the C&O said his road has given serious study to labor "turnover." Despite the initial appearance of stability in the total work force, the C&O found "an extremely high rate of turnover" among the relatively small group of college graduates who come into the company. Mr. Householder emphasized the opinion that railroads "still have a long way to go in competing with other industries in recruiting and maintaining the services of young people with high potential."

Recruitment alone, as Mr. Householder and others point out, is a fertile field, perhaps as good a place as any to initiate basic efforts in human relations. Mr. Loftis of the Rock Island said his road started a long-range endeavor with its employee selection program. Coupled with this refinement of "hiring," Mr. Loftis said he believes the education of supervisors is particularly important because of their direct effect on on-the-job performance.

N. R. CRUMP SPEAKING

(Continued from page 38)

but emphasizes: "Don't forget, he started at the end of a No. 2 shovel."

The lure of the business pulled young "Buck" Crump out of school at 16, to work as a machinist's apprentice. He went to night school to finish his high school courses. In 1926, at the age of 22, he took leave of absence to enter Purdue University in Indiana—chosen because it then offered the most complete instruction in the mechanical side of railroading.

Returning to the CPR, he went back to the mechanical department. The year 1933 found him night roundhouse foreman at Moose Jaw, Sask. Although he was working nights, for a 13-hour stretch—"with a rare day off"—and had a family of growing children, Mr. Crump decided to seek a degree as mechanical engineer—from Purdue, because it was not obtainable in any Canadian institution.

For two years he studied in odd hours, and in 1936, obtained the title of "mechanical engineer"—with a thesis on diesel locomotives, of which there were then only a handful in North America.

References in texts were few, and most of those few were in German. Tied down in Moose Jaw, the student had no opportunity to consult references in the great libraries. Mr. Crump recalls that he relied particularly on the business press. He showed this reporter a copy of his pioneering thesis. About a third of the citations listed in its bibliography were from the monthly *Railway Mechanical Engineer* (affiliate of *Railway Age*, now titled *Railway Locomotives & Cars*).

Mr. Crump said: "That ought to make you feel pretty good."

It did.

Mechanical—Operating—Executive

Working up through the mechanical department, the new "M.E." ultimately moved into the operating and executive side of the CPR. In 1949, at the age of 45, he was elected senior vice-president and a director.

With his wife—whom he met at Purdue—and his two daughters, the new CPR head lives in suburban Hampstead, just outside Montreal. He collects early American weapons, specializing in firearms of the Canadian west. He puts his prizes into fireable condition in a well-equipped machine shop at home. His summer cottage is a product of do-it-yourself.

An erstwhile golfer—"world's worst," he claims—he seldom has time for a game now. In fact, last year he got in only one session. The reason is the same he gave several weeks ago to an inquiring newspaper reporter who asked him how a railroad president spends his time.

"Working like hell."

CHARLES R. COX

Portrait by Fabian Bachrach

"I urge every executive..."

"I know of no better method for each citizen to protect the American way of life than by building his own economic security and by helping his Government to keep financially sound. Both these results can be accomplished through the Payroll Savings Plan. I urge every executive in the nation to give this Plan his active and vigorous support."

CHARLES R. COX, ***President, Kennecott Copper Corporation***

With the active cooperation of Mr. Cox, Kennecott conducted a person-to-person canvass which put a Payroll Savings Application in the hands of *every* one of Kennecott's 20,000 employees. The men and women of Kennecott did the rest. Country-wide participation in Kennecott's Payroll Plan rose from 24% to 52%.

Your State Director, U. S. Treasury Department, is ready to help you install a Payroll Savings Plan, or show you how to build participation in an existing Plan through a simple person-to-person canvass. Write today to Savings Bonds Division, U. S. Treasury Department, Washington, D. C.

The United States Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

RAILWAY AGE

Railway Officers

CENTRAL VERMONT.—Edward J. Movalli, trainmaster at St. Albans, Vt., since March 1, has been promoted to assistant superintendent, Northern division.

Frederick J. LaDue, general agent at Burlington, Vt., retired May 31, after 48 years of service with the CV.

CHARLESTON & WESTERN CAROLINA.—J. W. Garrett, assistant trainmaster at Augusta, Ga., has been appointed trainmaster there, succeeding **J. M. Marsh,** deceased.

CHESAPEAKE & OHIO.—W. F. Stone, assistant to general manager at Huntington, W. Va., has been appointed superintendent power utilization—system, at that point. **S. L. Barksdale,** general inspector of transportation at Clifton Forge, Va., has been named assistant superintendent power utilization there. **K. B. Jarrell,** inspector of transportation at Huntington, W.Va., has been appointed assistant superintendent power utilization at Russell, Ky.

O. D. Ellison, terminal trainmaster at Russell, has been appointed assistant superintendent there. **K. B. Robertson,** assistant trainmaster at Huntington, has been named trainmaster at Stevens, Ky. **H. L. Williams** succeeds Mr. Ellison as terminal trainmaster at Russell.

E. J. Lemieux has been appointed general agent at Pittsburgh, succeeding **H. A. Leech,** who retired May 31 after 35 years with the C&O. **William J. Wesley** has been named general agent at Kansas City, Mo.

RAILWAY EXPRESS AGENCY.—John G. MacFarlan has been appointed to the newly created post of general agent, traffic, at Washington, D.C.

Robert A. Miller, superintendent at Detroit, has been appointed general manager at Houston, succeeding **J. A. Papa,** who has been transferred to the Chicago department.

SANTA FE.—F. N. Stuppi, acting assistant general manager, Coast lines, has been appointed assistant general manager, Coast lines at Los Angeles, succeeding **F. A. Baker,** retired. **S. Rogers** has been named superintendent, Valley division, at Fresno, Cal.; **O. R. Hammit** has been named superintendent, Albuquerque division, at Winslow, Ariz.; and **B. O. Bernard** has been named superintendent, Los Angeles Terminal division, at Los Angeles.

C. S. Cravens, assistant general manager, Western district, at Topeka, Kan., has retired after more than 55 years of service. Mr. Cravens' successor is **J. E. Lester,** assistant general manager, Northern district, at La Junta, Colo. Mr. Lester, in turn, has been replaced by **T. J. Anderson,** superintendent, Plains division, at Amarillo, Tex. **W. R. Henry,** trainmaster at Amarillo, succeeds Mr. Anderson, and **E. B. Jones,** trainmaster of the Gulf, Colorado & Santa Fe at Brownwood, Tex., replaces Mr. Henry. **A. N. Wade,** trainmaster of the GC&SF at Beaumont, Tex., succeeds Mr. Jones, and in turn has been succeeded by **C. F. Stanford, Jr.**

William B. Cox has been appointed special representative, public relations department, at Chicago, succeeding **James L. Merrick,** retired.

SOO LINE.—R. W. Wright, rules examiner at Minneapolis, has been appointed trainmaster of the Minnesota division at Enderlin, N.D., succeeding **J. H. Lawyer,** transferred.

WABASH.—Chester A. Johnston, general manager, has been elected vice-president and general manager of this road and the **Ann Arbor,** and appointed general manager of the **New Jersey, Indiana & Illinois,** at St. Louis. **W. Donald Steele,** secretary and treasurer of the three companies, has been elected vice-president, secretary and treasurer at New York. **James F. Nellis,** superintendent of the Decatur division of the Wabash at Decatur, Ill., has been named assistant general manager at St. Louis. **E. W. Nixon,** superintendent of the Chicago Terminal division, has been transferred to the Moberly (Mo.) division, succeeding **Joseph N. Sailor,** who transfers to Decatur. **Robert J. Cripe,** trainmaster at Decatur, succeeds Mr. Nixon as superintendent of the Chicago Terminal division.

CHICAGO & ILLINOIS MIDLAND.—C. D. Forth, general attorney, who has been appointed general counsel at Springfield, Ill. (*Railway Age*, May 2, page 69).

Chester A. Johnston

W. Donald Steele

WATERLOO, CEDAR FALLS & NORTHERN.—H. L. Callies, shop foreman, has been appointed master mechanic at Waterloo, Iowa, succeeding **W. G. Lamb,** who retired May 1 after 46 years of service in that capacity.

OBITUARY

Theodore E. Applegate, 51, director of the **New York Central** news bureau at New York, died of a heart attack May 26, while returning to New York aboard an NYC train, after attending the road's annual stockholders' meeting at Albany.

William A. Murphy, 66, freight claim agent of the **Nickel Plate** at Cleveland, died May 25 at St. John's Hospital in that city.

George R. Kimbel, 53, passenger traffic manager of the **Illinois Central** at Chicago, died May 26 at the Illinois Central Hospital in that city.

Frederick H. Knickerbocker, 79, retired executive assistant to president of the **Union Pacific,** died May 25.

G. I. Moseley, assistant general freight agent (divisions) of the **Illinois Terminal** at St. Louis, died May 4.

Julian J. Nugent, 58, advertising manager of the **Baltimore & Ohio** at Baltimore, died May 31 at University Hospital, following an illness of several months.

CLASSIFIED ADVERTISEMENTS

FOR SALE
RAILWAY EQUIPMENT
Used—As Is—Reconditioned

RAILWAY CARS
All Types

"Service-Tested"
FREIGHT CAR REPAIR PARTS
For All Types of Cars

LOCOMOTIVES
Diesel, Steam, Gasoline, Diesel-Electric

RAILWAY TANK CARS and STORAGE TANKS
6,000 - 8,000 and 10,000-gallon Cleaned and Tested

CRANES
Overhead and Locomotive

RAILS
New or Relaying

IRON & STEEL PRODUCTS, INC.
"ANYTHING containing IRON or STEEL"

General Office
13486 So. Brainard Ave.
Chicago 33, Illinois
Phone: Mitchell 6-1212

New York Office
50-c Church Street
New York 7, New York
Phone: BEekman 3-8230

POSITION WANTED

Position as Public Relations or Development Officer, on medium or short line by experienced railroad man. Professional background and experience. Can furnish best of references. Address Box 530, RAILWAY AGE, 79 West Monroe Street, Chicago 3, Illinois.

POSITION WANTED

Short Line Railroad Executive. Fourteen years experience in Traffic and Operating Departments, Age 36. Resume on request.

Address replies to Box 749, RAILWAY AGE, 30 Church St., New York 7, N. Y.

TAKE

ADVANTAGE

OF THIS SPACE

Educational Services
for
RAILROAD MEN
Our New Service on
Diesel Locomotive
Operation
is highly recommended
for
Engineers and Firemen

The Railway Educational Bureau
Omaha 2, Nebraska

FOR SALE

2-Whiting Drop Pit Tables, 35 Ton, Type B, 2 Screw. New. Bargains. 2-Underwood Pin Truing Machines. New. 1-Southwark 100 Ton Hydraulic Bushing Press. 1-Birdsboro 400 Ton Wheel Press. 1-Bridgeford Axle Lathe.

R. H. BOYER
2005-13 W. Bellevue Street
PHILADELPHIA 40, PA.

AVAILABLE
SENIOR SIGNAL ENGINEER

Consultation . . . Manufacturer's Representative . . . Operating Circuits — all branches. Full particulars. Box 523, RAILWAY AGE, 79 West Monroe St., Chicago 3, Illinois.

FOR SALE

10—Koppel and Western 30 cu. yd. Air Dump Cars. Lift type doors with side aprons. All steel. Bargain.

80—ton General Electric diesel electric locomotive 500 HP Cummins engines. Built 1947.

80—ton Whitcomb diesel electric locomotive 500 HP Cummins engines. Rebuilt.

44—ton General Electric diesel electric locomotive 380 HP Caterpillar engines 4 motor type.

MISSISSIPPI VALLEY EQUIPMENT CO. 509 Locust St. St. Louis 1, Mo.

EVERY YOUNG MAN...

with a serious interest in the railroad business ought to read Railway Age. He owes it to his own best interests to get Railway Age at home each week. This way a few minutes reading will keep him informed as to what's going on in the industry, what's new, how someone else is solving problems common to his railroad and his own job.

Railway Age has a 27-man editorial staff—including full time editors at Washington—to do the bulk reading for busy Railway Age subscribers, culling, screening and condensing all the information of national importance to the industry.

Our records show that many of the top railway men today subscribed to Railway Age at their homes when they were in supervisory positions—and that they continue their home subscriptions in force today.

Let Railway Age go to work for you, too!

Railway Age
30 Church St.
New York 7, N. Y.

Please send Railway Age to me at

....., ...
Street Address Railroad

....., ..., for one year ($4) ....., or
Zone State

two years ($6) ....., enclosed (or bill me later .....). Rates shown are for railroad men only.

....., ...
Name Position or Title

....., ...
Department City

6/6/55

Service and Quality—Flintkote Products for RAILROADS

PROTECTIVE COATINGS
- Asphalt Emulsions
- Asphalt Cutbacks
- Car Cements (Spray, Brush and Trowel Types)

SPECIALTIES
- Aluminum Asphalt Paint
- Insulation Coatings
- Industrial Adhesives
- Sound Deadening Materials
- Products for Waterproofing and Dampproofing

FLOORING MATERIALS
- Asphalt Mastic
- Latex Mastic (Underlayments and Finish Flooring)
- Tile Cements
- Anti-slip Coating

BUILDING MATERIALS
- Roll Roofing
- Roof Coatings
- Asphalt Shingles and Siding
- Asbestos-Cement Shingles and Siding
- Insulation Wallboard, Tile and Plank

Call or Write for Complete Information

THE FLINTKOTE COMPANY, *Industrial Products Division,* 30 Rockefeller Plaza, New York 20, N. Y.
Boston • Chicago Heights • Detroit • Los Angeles
New Orleans • Philadelphia

In Toronto, Ontario:
The Flintkote Company of Canada, Ltd.

In London, England:
Industrial Asphalts Company, Ltd.

FLINTKOTE

Vol. I of brake study course

ABC's of AIR BRAKES

with Dictionary of Air Brake Terms

by C. M. DRENNAN

A teacher of air brakes to railroad men since 1908; retired supervisor of training, Westinghouse Air Brake Co.

This complete introduction to the study of air brakes contains 70 of the famous "chalk talk" diagrams which the author has used successfully for years. Its three sections include: Section 1—friction and braking ratio; freight and passenger train brake control. Section 2—description, function and operation of pistons, valves, electric controls and other components. Section 3—air brake dictionary covering words, terms and phrases, many of which have specific air brake meanings. Following each chapter is a quiz to test the student's absorption of the lesson. A practical book for practical men. 243 pages; approximately 8 by 11 inches; cloth bound.

Full Refund If Not Completely Satisfied
Send for your copy today

Only $4.75 postpaid

SIMMONS-BOARDMAN BOOKS 6-6-55
30 Church St., New York 7, N. Y.

I enclose check or money order for $..... Send postpaid, ... copies of ABC's of AIR BRAKES. If I am not satisfied I may return books for full refund within 10 days after receipt.

Name .....

Address .....

City, zone, state .....

ADVERTISERS IN THIS ISSUE

Armco Steel Corp. 1
Agency—N. W. Ayer & Son, Inc.

R. H. Boyer 47

Budd Company, The 18, 19
Agency—Lewis & Gilman, Inc.

Classified Advertisements 47

Electro Motive Division, General Motors Corp. ..... Front Cover
Agency—Arthur Kudner Agency, Inc.

Fairbanks-Morse & Co. 43
Agency—The Buchen Company

Federal Telephone & Radio Corp. 15
Agency—J. M. Mathes, Inc.

General Railway Signal Company ..... Back Cover

Gould National Batteries, Inc. 24
Agency—Hutchins Advertising Co., Inc.

Graybar Electric Co. 22
Agency—G. M. Basford Co.

Holland Company 6
Agency—Van Auken, Ragland & Stevens, Inc.

Iron & Steel Products, Inc. 47

Kinki Nippon Railway Co., Ltd. 13
Agency—Hixon & Jorgenson, Inc.

Le Tourneau-Westinghouse Co. 23
Agency—Andrews Agency, Inc.

Linde Air Products Co. 17
Agency—J. M. Mathes, Inc.

Minnesota Mining & Mfg. Co. 21
Agency—Rauthrauff & Ryan, Inc.

Mississippi Valley Equipment Co. 47

Mon-O-Coach Inc. 40, 41
Agency—Arthur R. MacDonald, Inc.

Railway Educational Bureau 47

Symington-Gould Corporation, The .. Inside Back Cover
Agency—Ed Wolff & Associates

Union Switch and Signal Co. 2
Agency—Batten, Barton, Durstine & Osborn, Inc.

U. S. Rubber Co. ..... Inside Front Cover
Agency—Fletcher D. Richards, Inc.

Westinghouse Air Brake Company 4
Agency—Batten, Barton, Durstine & Osborn, Inc.

Youngstown Sheet & Tube Co. 20
Agency—The Griswold-Eshleman Company

4 REASONS...

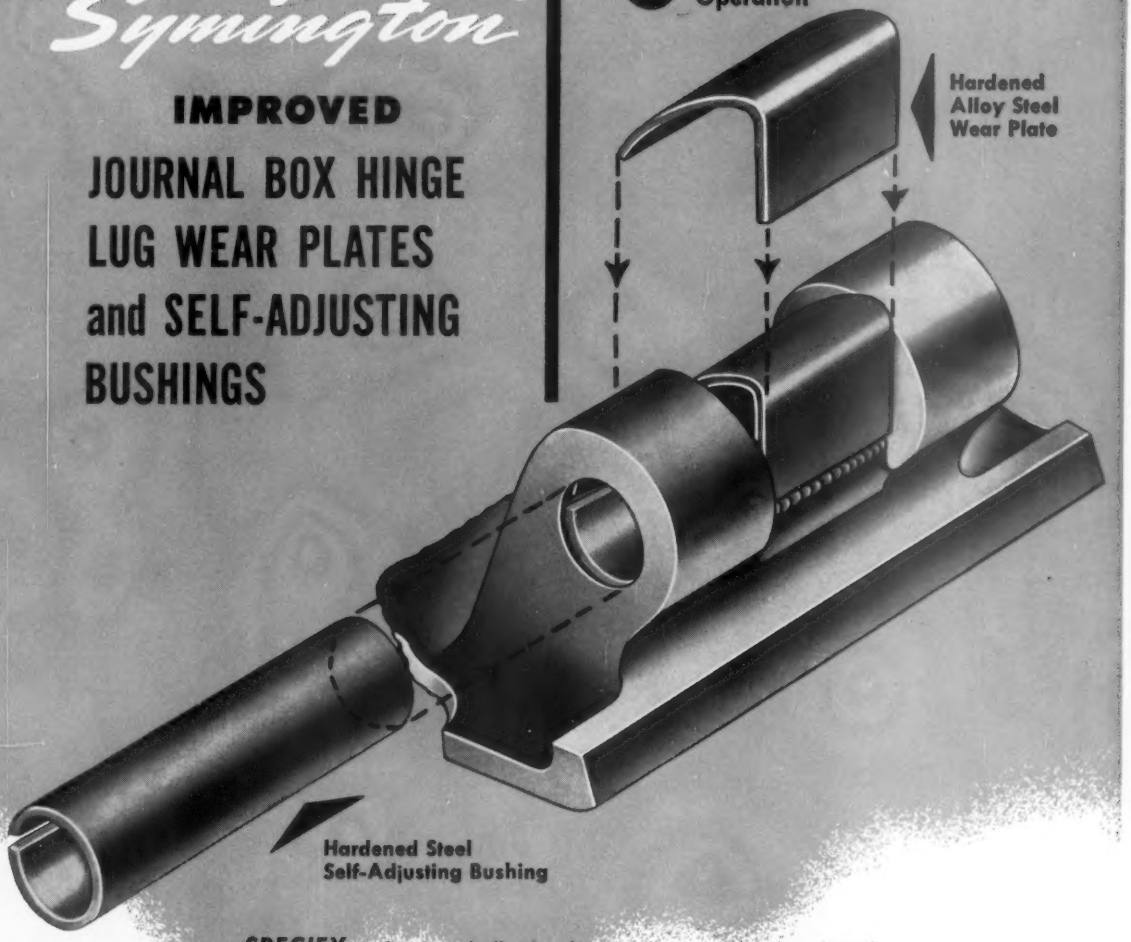
to specify

Symington®

IMPROVED

JOURNAL BOX HINGE LUG WEAR PLATES and SELF-ADJUSTING BUSHINGS

1. Stop Hinge Lug and Pin Hole Wear
2. Reduce Journal Box Lid Losses
3. Maintain Effective Lid Closing Pressure
4. Provide Easier Lid Operation



✔ Ship by Rail
✔ Travel by Rail

SPECIFY hardened alloy steel wear plates and hardened steel self-adjusting bushings be applied to Journal Box Hinge Lugs on all separate Journal Boxes or Integral Box Side Frames for either maintenance or new equipment. They are available and applied by all manufacturers of Side Frames and Journal Boxes.

A.A.R. ALTERNATE STANDARD—SEE MANUAL PAGE D-15-A

THE SYMINGTON-GOULD CORPORATION

Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • *In Canada:* ADANAC SUPPLIES, LTD., Montreal, Que.

G·R·S YARD AUTOMATION

Installed on the NORTHERN PACIFIC

NORTHERN PACIFIC RAILWAY

Radar "eyes" and electronic computer "brains" classify cars at Northern Pacific's ultra-modern yard at Pasco, Washington.

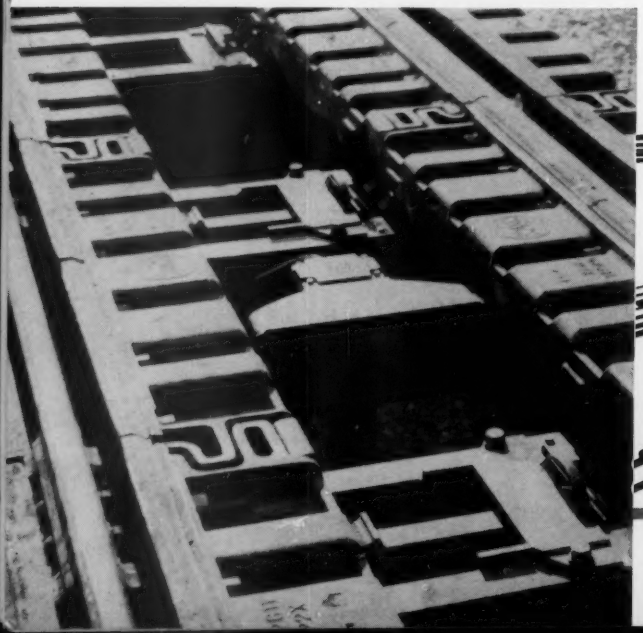
HOW IT WORKS

Once track destinations have been fed into the hump control storage machine, the rest is automatic. G-R-S Yard Automation checks cuts for length, weight, rollability, and route resistance. Switches snap into position ahead of each cut. Radar "eyes" continuously monitor the cars as they pass through the electric retarders. With all pertinent information thus available, electronic computer "brains" control the electric car retarders to deliver each cut to its designated classification track at the proper coupling speed.

GENUINE AUTOMATION

G-R-S Yard Automation does not depend on guess work. Functions ordinarily requiring human judgment and manual control are performed automatically—precisely and consistently.

The Northern Pacific has joined an ever-growing list of railroads who are turning to G-R-S Yard Automation to get cars classified quickly, safely and at minimum cost.



Ultra-high-frequency antenna units, set within the retarders, are Pasco Yard's radar "eyes."

A G·R·S DEVELOPMENT

GENERAL RAILWAY SIGNAL COMPANY

ROCHESTER 2, NEW YORK

230 PARK AVE. NEW YORK 17 • 122 S. MICH. AVE. CHICAGO 3

611 OLIVE ST. ST. LOUIS 1

2766